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1875/76

ANNUAL REPORT

AND

TRANSACTIONS

OF THE

PLYMOUTH INSTITUTION

AND

Debon and Cornwall

NATURAL HISTORY SOCIETY.

VOLUME V. PART III.

1875-6.

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1876.

MAR 3 1969

ANNUAL REPORT

OF THE

TO THE BINDER.

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ANNUAL REPORT
OF THE
PLYMOUTH INSTITUTION
AND
Devon and Cornwall Natural History Society.

1875-76.

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SESSION 1875-76.

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Botany—MR. I. W. N. KEYS.

Geology and Mineralogy—DR. OXLAND.

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MR. A. P. PROWSE.

DR. W. H. PEARSE.



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Gibbs, F. W., C.B., 24, Mount-street, Grosvenor Square, London.	Worth, R. N., F.G.S., George-street, Plymouth
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Nelson, Major-Gen., R.E.	

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land Terrace

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Balkwill, Francis H., Lockyer-street
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Vicarage, West Alvington

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Mount, Mannamead
Fox, Reynolds, Westbrook, Tamerton

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Harvey, W., 21, Caprera Terrace
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Sussex Terrace
Hodge, H. C., 5, Wellfield Villas,
Turnchapel
Hodge, Rev. J. M., B.A., 10, North
Hill Terrace
Holmes, Rev. P., D.D., Mannamead
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M.R.C.S., 12, Lockyer-street

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Terrace
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Latimer, Isaac, Frankfort-street
Lewis, J. D., 30, Eaton Square, Lon-
don, S.W.
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Liscombe, Robert Lavers, Mount Athos,
near Plymouth

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Mount Edgecumbe, The Right Hon. the
Earl of

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Terrace
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Oxland, Dr. R., F.C.S., Portland Square

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Prowse, A. P., Mannamead

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Stoke
Rider, A. 4, Haddington Road, Stoke
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Lockyer-street

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Shelly, J., Princess Square
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Spender, E., London
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Square, Elliot, Athenæum Terrace

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"The property of the Institution, the election of Members, management of the concerns, and enactment of laws, are vested exclusively in the Lecturing Members."—*Law 2.*

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Brown, Geo. H., Mill Lane	James, W. C., Woodside
Brown, John, 14, Lockyer-street	James, E. H., Woodside
Cawse, Henry, Old Town-street	James, Edward, Greenbank
Ching, W. H., 12, Emma Place, Stonehouse	James, Capt., Yacht Club
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Elliott, S., Lockyer-street	O'Connell, Col., Hartley Villas, Higher Compton
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 Plummer, Thomas, 12, Holburn Place,
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 Snell, H. J., Courtenay Street

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 [Place
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 Willoughby, Jos., 33, Wyndham Place
 Wilson, J. W., 17, Woodland Terrace
 Windeatt, John, Brunswick Terrace
 Wolferstan, Sedley, M.R.C.S., Braid-
 wood Terrace
 Wonnacott, John, 15, Haddington
 Road, Morice Town
 Woodhouse, H. B. S., Gibbon-street

 Yeo, H. C., 16, Princess Square

LADY ASSOCIATES.

Collier, Miss B. C., Woodtown, near
 Horrabridge

 Hopper, Miss, Caprera Terrace

 Issanchou, Mdlle., 1, Leigham Terrace

 Kendall, Miss A. C., Plymouth High
 School

Loye, Mrs., 7, Osborne Place

 Parker, Miss S., Torrington House
 Pomeroy, Mrs. and the Misses, 1, Edg-
 cumbe-street, Stonehouse

 Rumble, Miss, Courtenay-street

 Snell, Miss, Chapel-street, Stonehouse
 Snell, Miss J., Chapel-st., Stonehouse

JUNIOR ASSOCIATE.

Varnier, Alex., The Crescent

SECRETARIES' REPORT.

1875-6.

THE Secretaries present the following Report of the proceedings of the Session.

The lectures were—

Oct. 7.	Inaugural Address . . .	THE PRESIDENT.
„ 21.	Arctic Exploration . . .	MR. FRANCIS E. FOX, B.A., F.R.G.S.
„ 28.	Food . . .	MR. W. SQUARE, JR., F.R.C.S., F.R.G.S.
Nov. 4.	The Tides . . .	DR. MERRIFIELD, F.R.A.S., F.M.S.
„ 11.	Venice . . .	MR. W. SQUARE, JR., F.R.C.S., F.R.G.S.
„ 18.	Prose Writings of John Milton	MR. W. HARVEY.
„ 25.	Geology of Plymouth . . .	MR. R. N. WORTH, F.G.S.
Dec. 2.	The Tempest . . .	MR. MONTAGUE BERE, Q.C.
„ 9.	Some Remarks on Recent Speculations on the Origin and Specific Character of Man .	REV. J. ERSKINE RISK, M.A.
„ 16.	Ahrens on the History of the Development of the Idea of Law	MR. W. ADAMS.
Jan. 13.	Troy and its Remains, with some Notices respecting the Origin of the Homeric Olympus .	REV. S. BEAL, B.A., M.R.A.S
„ 20.	Some Facts concerning Diet .	DR. W. H. PEARSE.
„ 27.	Pauperism . . .	REV. W. SHARMAN.
Feb. 3.	Further Facts and Arguments on the Origin of Man, with special reference to the Nontheistic Theory of Evolution . .	REV. J. ERSKINE RISK.
„ 10.	Quality (Timbre) of Musical Sounds . . .	MR. R. SMITH.
„ 17.	Mineral Resources of Devon and Cornwall (Part II.) . .	DR. OXLAND.
„ 24.	The Defence of Poetry—Sidney and Shelley . . .	THE PRESIDENT.
Mar. 2.	Colour . . .	MR. C. OXLAND.

Mar. 9.	The March to the North Pole: its Hope of Success . . .	DR. C. PAGET BLAKE.
„ 16.	Jottings from the "Peking Gazette" . . .	REV. S. BEAL, B.A., M.R.A.S.
„ 23.	Elocution . . .	MR. PIERCE TAYLOR.
„ 30.	Justice and Law . . .	MR. R. COLLIER.

Two of the lectures announced on the card for the first part of the Session were obliged to be postponed on account of the illness of the members who had undertaken to give them, but were both delivered during the second course.

The average attendance of nearly seventy-eight shows a considerable increase over that of last year; but the Society would be much benefited by the more regular attendance of some of the older members.

Twenty members, twenty-seven associates, nine lady associates, and one junior associate, have joined the Society during the year, the present numbers being seventy-eight members, one hundred and three associates, twelve lady associates, and one junior associate.

We have to mention with deep regret the deaths of two highly-valued members who have presided over the Society, Mr. Alfred Rooker and the Rev. J. M. Charlton; also of our distinguished honorary member, Dr. Tregelles, a notice of whose life was added to last year's Report at the request of the members at the Anniversary Meeting; and of two corresponding members, Mr. W. J. Henwood and Dr. Letheby.

The laws as revised at the last Annual Meeting have been printed, and copies can be supplied to members desiring them.

Two Conversaciones have been held during the Session, on the 14th October and 6th January last, at which selections of music were performed under the direction of Mr. S. Weekes and Mr. Hele. Mr. R. L. Liscombe and other gentlemen kindly lent pictures to be exhibited at the first, and the second exhibition was was superintended and principally supplied by members of the Plymouth Art Club.

A very successful excursion of the Society to Okhampton took place in August, the weather being very fine, and the attendance numerous.

At the Anniversary Meeting papers were read by Mr. W. Square, jun., on Spiritualism, and Dr. Pearse on Indian Dietary, which were followed by short discussions.

The Curator reports that the Library of the Plymouth Institution has proved of much service to the Society during the past year, judging both from the number of the volumes which have been taken out, and from the number of the members who have required them.

Many volumes of serials have been bound up and placed on the shelves, in continuation of sets.

The Society is indebted to one of the Secretaries, Mr. W. Square, for many numbers of the "Proceedings of the Royal Geographical Society;" to another member, Mr. F. Brent, for a copy of Gray's "Natural Arrangement of British Plants," and Winch's "Flora of Northumberland and Durham;" to Mr. J. Brooking Rowe, for Miss Fox's "Kingsbridge and its Vicinity;" and to Dr. Merrifield, for a series of Weather Charts. Dr. Ackland has kindly sent two pamphlets.

The following societies have supplied portions of their respective publications:

British Association—Report, 1874.

Zoological Society of London—Proceedings, part 4, 1874; parts 1, 2, 3, 1875; List of Vertebrate Animals in the Gardens of the Society; List of Books in the Library.

Geological Society of London—"Quarterly Journal," several numbers.

Royal Geological Society of Ireland—vol. iv., part 2, N.S.

Tyneside Field Club—"Nat. Hist. Trans. Northumberland and Durham," vol. v., part 2.

Royal Dublin Society—No. 14, vol. vii.

Royal Institution of Cornwall—Nos. 16, 17, and 58, Annual Reports.

Devonshire Association—vol. vii.

Literary and Philosophical Society of Liverpool—No. 29.

Literary and Philosophical Society of Manchester — many numbers.

Norfolk and Norwich Naturalists' Society—vol. ii., part 1.

Berwickshire Naturalists' Field Club—Proceedings.

Bristol Naturalists' Society—vol. i., part 2, N.S.; with a copy of laws, and list of members.

Belfast Naturalists' Field Club—Report and Proceedings, 1873-74; also "Guide to Belfast."

Literary and Philosophical Society of Winchester and Hampshire—vol. ii., part 1.

Smithsonian Report, 1873-74.

They have to thank Dr. Hayden, employed by the U.S. Government in the scientific explorations of portions of the territories, for the following large and very valuable contribution to their library : "U.S. Geological and Geographical Survey of Colorado;" "Report of Geological Survey of the Territories," vol. vi.; "Lists of Elevations," by Gannet; "Catalogue of the publications of the Survey;" "Coues' Birds of the New World;" "Review of the Fossil Flora of North America;" "Descriptive Catalogue of Photographs of the Survey;" and "Bulletin," No. 6.

A correspondence has been opened with the Societa Toscana della Scienza Naturale, from whom three parts of their "Atti" have been received in return for the last Annual Report.

The following works have been purchased :

"Monograph of the British Spongiadæ," by Bowerbank, vol. iii. (Ray Society).

"Zoological Record, 1873."

Darwin's "Insectivorous Plants."

Buckner's "Man in the Past, Present, and Future."

Ellacombe's "Bells of Somersetshire."

Macleane's "History of Trigg Minor," parts 10, 11.

"Palæontographical Society," vol. xxix.

W. ADAMS,	} <i>Hon. Secs.</i>
W. SQUARE, JUN.,	

TREASURERS' REPORT.

1875-76.

THE Accounts for the past twelve months show, for the first time for several years, a balance in favour of the Society. Although the total income is not so large as in some past years, the sum paid as Annual Subscriptions amounts to £184 3s. 6d., being £7 15s. in excess of last year; the largest sum ever received under this head. There is no doubt that this increase is mainly due to the additional value of the Reports now published.

The balance in hand includes a sum of £7 1s., a donation from Dr. Holmes, kindly given for the purchase of books for the Library, on the expiration of his term of office as President.

The expenditure calls for little remark, the figures appearing under each head being much as usual. But £10 13s. 1d. for *Conversazioni* is heavier than for some time past; and £14 16s. has been paid for the illustrations of last year's Report.

The debt to the Bank, £100, bearing interest at £4 per cent., still remains due.

It is evident that any extraordinary expenditure upon the building, as proposed, must be met by borrowing money, the income being only sufficient, taking one year with another, to meet the current expenses.

J. BROOKING ROWE, }
S. CATER, } HON. TREASURERS.

Dated 6th April, 1876.

BALANCE SHEET

OF

The Plymouth Institution and Devon and Cornwall Natural History Society,
For the Year ending 6th April, 1876.

	£	s.	d.		£	s.	d.
To Printing Reports	.	35	8	0	By Annual Subscribers, at 21/-	.	175
Library and Binding	.	31	17	7	Ditto ditto at 10/6	.	6
Salaries and Commission	.	17	7	10	Arrears of Subscriptions	.	3
Lighting and Warming	.	13	18	0	Rent of Hall	.	9
Conversations	.	10	13	1	Admissions	.	3
Rates, Taxes, and Insurance	.	8	13	1	Excursion—Balance	.	0
Illustrations for Report	.	14	16	0	Donation for Library	.	7
Incidentals	.	20	13	9			
Interest	.	4	0	0			
Repairs	.	12	11	4			
Museum	.	5	7	0			
Balance due to Treasurers	.	0	4	2			
Balance in hand	.	30	11	10			
		£206	1	8			£206
							1
							8

(Signed)

J. BROOKING ROWE, }
S. CATER, } Treasurers.

6th April, 1876.

Balance

We have examined the foregoing account and Balance Sheet, and compared the same with the vouchers, and find the same correct,

(Signed)

ROBERT OXLAND, }
WILLIAM H. PEARSE, } Auditors.

An ABSTRACT from the METEOROLOGICAL REGISTER, from 1st January, 1875, to 31st December, 1875, kept at the Navigation School, Gascoyne Place, Plymouth (Lat. $50^{\circ} 22\frac{1}{2}'$ N., Long. $4^{\circ} 7\frac{1}{2}'$ W.), by JOHN MERRIFIELD, LL.D., F.R.A.S., F.M.S.

MONTH.	BAROMETRICAL PRESSURE REDUCED TO MEAN SEA LEVEL AT 32° FAH.			TEMPERATURE.			HYGROMETER.				RAINFALL.		DIRECTION OF WIND AT 8 A.M.					
	Average Barometer	Maximum for Month.	Minimum for Month.	Average Maximum in shade.	Average Minimum.	Average Temperature.	Average dry bulb.	Average wet bulb.	Average dew point.	Average humidity-Saturation, 100.	Number of days on which not less than .01 inch fell.	Quantity for the month in inches.	From N. to E.	From E. to S.	From S. to W.	From W. to N.	Calm.	
1875.																		
January .	29-912	30-543	29-242	51-34	43-65	47-50	46-92	46-50	46-03	96	28	7-58	2	11	15	2	1	1
February .	30-025	30-517	29-326	44-61	35-20	39-91	38-36	37-18	35-60	90	11	1-49	19	2	1	3	3	3
March . .	30-150	30-564	29-559	49-29	37-40	43-35	41-60	40-34	38-78	90	5	.93	17	2	4	4	4	4
April . . .	30-046	30-559	29-251	55-12	41-52	48-32	47-13	44-88	42-36	84	11	1-14	16	4	4	3	3	3
May	30-028	30-467	29-586	62-29	48-52	55-41	55-21	52-65	50-19	83	13	1-99	5	10	8	8	0	0
June	29-941	30-279	29-460	65-47	52-53	59-00	58-60	56-03	53-74	84	18	3-13	2	4	13	10	1	1
July	29-988	30-363	29-414	67-52	53-50	60-51	60-45	57-90	55-66	84	15	3-90	7	4	6	10	4	4
August . . .	30-060	30-381	29-700	68-50	53-44	60-97	60-36	58-80	57-11	89	14	3-00	5	5	8	8	5	5
September .	30-020	30-291	29-739	67-33	55-60	61-47	59-49	58-43	57-49	93	18	5-48	11	6	8	3	3	2
October . . .	29-756	30-499	29-064	56-89	46-11	51-50	50-35	49-64	48-89	95	23	6-65	7	9	7	6	2	2
November . .	29-826	30-228	28-882	49-82	40-52	45-17	45-12	44-11	42-94	92	19	4-86	11	3	6	8	2	2
December . .	30-127	30-523	29-654	45-33	36-38	40-86	39-84	39-07	38-07	94	13	1-38	7	7	8	3	6	6
Average for 1875	29-990	30-434	29-401	56-96	45-36	51-16	50-29	48-79	47-24	90	188	41-53	109	67	88	68	33	33
Average for 11 years . .	29-949	30-393	29-324	58-84	45-14	51-99	51-44	49-42	47-33	86	176	36-42	72-5	71-4	110-7	87-1	23-3	23-3

The observations are all made at Eight a.m. The Rain Gauge is by Casella, and eight inches in diameter. Its top is 9 feet 2 inches above the ground, and 75 feet above the mean level of the sea. A rainy day is one in which not less than one-hundredth of an inch falls. The Instruments have all been supplied by the Meteorological Committee of the Royal Society, compared at Kew, and the index error supplied to each.

ADDRESS

AT THE OPENING OF THE SESSION 1875-6.

BY MR. J. SHELLEY,

President.

MR. VICE-PRESIDENT, LADIES, AND GENTLEMEN,

I suppose there is no enthusiasm more general and permanent than the enthusiasm for liberty. It has possessed, as with a kind of sacred passion, the finest and loftiest intellects of almost every age and country. Even religious enthusiasm has hardly been deeper, or burst forth with a more impetuous ardour.

But, as Mr. Mill has mentioned at the beginning of his Essay, the idea of liberty, or at any rate the idea that has been uppermost, has varied very much at different times. For the proof of this, it is not necessary to turn, as he has done, to remote ages or distant countries. In our own country, and within the last half century, personal, political, social, and intellectual freedom have in turn become prominent objects of enthusiasm: personal freedom in the efforts which resulted in the abolition of slavery in our colonies; political freedom in the agitation for reform; social freedom in the immense, though comparatively quiet, revolution that has been going on during the last thirty or forty years; and intellectual freedom yet more recently and in a smaller circle, but one which is continually enlarging, and which includes already a large proportion of the leaders of all classes of society.

The objects of popular enthusiasm are always much more ardently advocated than clearly defined. Nor is liberty an exception to this rule. Words of this kind are employed as symbols of some good, which even at first, and when it is sought only by a few, is not so distinctly understood as it is eagerly desired, and they become more and more vague as they are appropriated for party

cries, and are taken up by persons who wish rather to use the watchword than to follow it.

In this way their original meaning is sometimes much altered, and it is often difficult to get a definition of them at all, and almost impossible to get one which will receive general assent. It is not at all easy to find a definition of liberty. Every one uses the word, and it is assumed that every one knows what it means. Every one is familiar with the word, no doubt; but familiarity, though it is often mistaken for knowledge, is a very different thing, and frequently exists without any real knowledge at all. Mr. Mill does not define the word, though he is careful to mention the kind of liberty with which his Essay is concerned. "It is not," he says, "the so-called liberty of the will;" "but civil or social liberty: the nature and limits of the power which can be legitimately exercised by society over the individual." I don't know whether this last sentence is meant to be a definition of civil liberty, but if so, it strikes me as a very odd one. Though Mr. Mill thus limits the subject of his Essay at the outset, its actual range is much wider than this limitation would imply. It covers in fact the whole of what he afterwards describes* as "the appropriate region of human liberty. It comprises," he says, "first, the inward domain of consciousness; demanding liberty of conscience in the most comprehensive sense, liberty of thought and feeling, absolute freedom of opinion and sentiment on all subjects, practical or speculative, scientific, moral, or theological." From this, he adds, the liberty of expressing and publishing opinions is "practically inseparable." Secondly, he continues, the principle which he assumes "requires liberty of tastes and pursuits;" and thirdly, "liberty of combination among individuals for any purpose not involving harm to others." The whole of this vast sphere is included within the argument of the Essay, which applies as directly and completely to intellectual as it does to civil or political liberty.

The range of the Essay being so wide, and the influence which it has obtained so great, not only from the reputation of its author, but from the vigour and eloquence of its style, and above all from its remarkable fulness and felicity of illustration, it is the more to be regretted that no definition of liberty is attempted in it.

The word appears, however, to be used throughout the Essay to

* People's Edition, p. 7.

mean the absence of restraint. This is, no doubt, the sense in which the word is generally used in popular discussion. It is the original sense in respect of bodily liberty, and from this it has been extended not only in popular discussion, but in essays and treatises of high pretensions to social, and even to intellectual and moral liberty.

It is not surprising that some persons, seeing how inadequate a motive is this mere absence of restraint to the enthusiasm which the very name of liberty excites, have thought the enthusiasm misplaced. Thus Mr. Fitzjames Stephen, in his book on *Liberty, Equality, and Fraternity*, which is in fact a criticism of Mr. Mill's Essay, says, "Discussions about liberty are in truth discussions about a negation. Attempts to solve the problems of government and society by such discussions, are like attempts to discover the nature of light and heat by enquiries into darkness and cold." (p. 181.) I cannot but think, however, that an enthusiasm so permanent, so deep-seated and widespread, must have for its object something more than a mere negation. To excite and sustain such an enthusiasm, there must be a perception,—dim perhaps, as popular perception often is, but still sure, of something really worth effort, of something intelligible, of something positive.

Is this the true nature of liberty, or is it indeed a mere negation? I am speaking now not of bodily or political liberty, but of intellectual liberty, which is in truth the real subject of the greater part of Mr. Mill's Essay. Does it consist, as he apparently would have it, in entire absence of restraint of "opinion and sentiment on all subjects, practical or speculative, scientific, moral, or theological"? Assuming this to be the case, Mr. Stephen replies in effect that it is not good in itself; that it may be extremely mischievous; that it can in no case be a reasonable subject of enthusiasm; and that we can only say whether it is worth seeking for or not when we know who are the people from whom restraint is to be removed, and what they intend to do with their liberty when they have got it. Mr. Mill, on the other hand, apparently regards it, whatever answer may be given to these questions, as "one of the leading essentials of well-being."

Into this controversy it is not necessary for me to enter, as my question is, Whether the definition of intellectual liberty, which is implied, I think, in Mr. Mill's Essay, and accepted by Mr. Stephen, is the true one? whether it does consist in the mere absence of

restraint? whether it is a mere negation, or something positive, and what? This is a question which must be at any time, I think, interesting to a Society like ours, and at the present time it has, I think, peculiar interest and importance.

What then is the nature of intellectual freedom? It is obvious at once that, even assuming it to consist in the absence of restraint, the restraint which is placed upon the mind or removed from it must be restraint of a very different kind from that which affects the body. For the mind, at any rate,

“Stone walls do not a prison make,
Or iron bars a cage.”

Yet it is equally obvious, I think, that the action of the mind may be hampered or impeded by external power. It is quite possible that the enactment of legal penalties may thwart or even stop altogether the activity of the mind in certain directions. Persecution may seldom, if ever, be successful in wholly stamping out an opinion, as we say; but it has certainly been successful again and again in hindering its spread, and every such case has been one in which external power has impeded or restrained the action of the mind. Law therefore may be opposed to intellectual liberty, may hamper and restrict it. But is this opposition essential, or is it only accidental? Can there be no liberty where there is law? The mere statement of the question is enough. So far from its being the case that there can be no liberty where there is law, it is nearer the truth to say that there cannot be liberty without law. It appears to me to be one of the great faults of Mr. Mill's *Essay*, that it fails clearly to recognise this mutual relation of liberty and law, that it seems to assume a perpetual and necessary antagonism between the two. Mr. Stephen, on the other hand, arguing that the whole fabric of society is based upon compulsion, arrives at the conclusion that “liberty, from the very nature of things, is dependent upon power; and that it is only under the protection of a powerful, well-organized, and intelligent government that any liberty can exist at all.” (p. 169.) On such a question, if there is need of appeal, let me appeal to the great authority of Burke. “The *extreme* of liberty,” he says, “(which is its abstract perfection, but its real fault) obtains nowhere, nor ought to obtain anywhere. Because extremes, as we all know, in every point which relates either to our duties or satisfactions in life, are destructive both to virtue and enjoyment. Liberty too must be

limited in order to be possessed." (*Letter to the Sheriffs of Bristol*, iii. 185.) And in another place: "Society requires not only that the passions of individuals should be subjected, but that even in the mass and body as well as in the individuals the inclinations of men should frequently be thwarted, their will controlled, and their passions brought into subjection. This can only be done by a power out of themselves, and not, in the exercise of its function, subject to that will and to those passions which it is its office to bridle and subdue." (*Refl. on the Revolution in France*, v. 123.)

In civil life, therefore, liberty and law, so far from being essentially opposed, are in fact correlatives, imply one another. And this is the case also in regard to intellectual life. For a free act is essentially an act under the control of reason. We never think of calling the movement of an inanimate object free, except by metaphor; and if we ever speak of the acts of a beast as free, we do so because we think of them as under the control of reason, and not merely impelled by appetite. But when we speak of an act under the control of reason, we mean that the act is directed towards a definite end, and that means are adopted which appear suitable for the attainment of the end. And this relation of means to an end,—that one thing which we call the cause is constantly followed by another which we call the effect, is what we call a law. Intellectual liberty cannot be exercised therefore without law: if there is no law, there is no liberty. It is plain then, that though liberty may be restricted by law, yet law is not necessarily opposed to liberty,—that law may exist without being a restraint on liberty at all.

A law against stealing, whether it be a moral or civil law, is no restraint upon the liberty of an honest man. But as soon as he becomes dishonest, as soon as he has a will to steal, he falls under the restraint of the law; the law opposes his liberty, his power of doing what he will.

I suppose that no one thinks it a restraint upon his liberty that he cannot make five of two and two. But if he were once to will to do this he would immediately feel that his liberty was restricted, he would find an inexorable law opposed to his power of doing what he will. It is more conceivable that a person might revolt against the law that a certain conclusion must follow from certain premises, and in such a case as soon as he willed to draw a different conclusion from the premises he would find the law opposed to his

liberty. Liberty then has to do with the will. I am not here concerned with the freedom of the will, the power of willing as we will, opposed to necessity. I am speaking of the power of acting as we will, and in speaking of acts, I mean acts of the mind as well as the body. This power of acting as we will is the essence of mental liberty expressed or implied in all the definitions of it that I am acquainted with. "In this consists freedom," says Locke, "in our being able to act or not to act according as we shall choose or will." It is "a right," according to Reid, "to act one way or another;" and "it is evident," he adds, "that this liberty extends to the will." The scholastic definition is to the same effect, that liberty lies in "the power of acting by oneself," *motu proprio*, of one's own accord or will. According to Cicero, it is "the power of living as you will."

If liberty then has to do with the will, and the opposition of law to liberty is not essential, but accidental only, we may suppose two ways of removing the opposition, the first being by the abrogation of the law, and the second by bringing the will into accord with the law. This is the case whether the law is civil or moral, or what we call a law of nature. The mind may be called free where it is subject to no law, or, on the other hand, where its will is so entirely in accord with the law that there is no opposition between them; the law does not interfere with its power of doing as it wills.

The former of these suppositions, the removal of restraint by the abrogation of law, is what appears to be the popular notion of intellectual liberty. It is certainly the idea of Mr. Mill's Essay. The principles which he lays down involve the entire removal of all restraint upon opinion and sentiment, moral and religious penalties being excluded by them as completely as purely civil penalties. The popular notion certainly does not go to this extent, but it differs only in being less thorough, because less consistent. Is this popular notion the true idea of intellectual liberty? Does this liberty consist in the abrogation of law? If this is the true idea of intellectual freedom, and if freedom is a good in itself, as we have seen it is declared to be by the common voice of mankind, and certainly by the unanimous consent of those who take this which I have called the popular view of it, then the more complete this freedom is,—the more entire the removal of everything which interferes with the mind's power of doing as it will, the better. But

is it possible for restraint to be entirely removed? I have shown already that it is involved in the very idea of a free act that it should be an act according to law, that where there is no law there can be no liberty.

But supposing that this entire removal of the restraint of law upon the acts of the mind were possible, does any one, do the most strenuous advocates of intellectual liberty, desire it? Certainly Mr. Mill does not. Indeed he makes the very largest exceptions to his claims for liberty, exceptions which seem to me virtually to cover very nearly the whole ground of the claim.

I object therefore not so much to his conclusions as to the sweeping principles which he has laid down, and which, as Mr. Stephen very properly remarks, he has nowhere proved. His exceptions include not only children and "young persons below the age which the law may fix as that of manhood or womanhood," but "those backward states of society in which the race itself may be considered as in its nonage." "Liberty, as a principle," he says, "has no application to any state of things anterior to the time when mankind have become capable of being improved by free and equal discussion." (p. 6.) I am not concerned to insist upon the difficulty of reconciling these exceptions with the general principle which Mr. Mill assumes, or of ascertaining their extent. It is enough that Mr. Mill, the most conspicuous and powerful advocate of intellectual liberty in the popular sense of the word, admits that he is not contending for the entire removal of restraint.

An argument from analogy would lead us to the same conclusion, that the removal of the restraint of law is not the true idea of intellectual freedom. We are told that every fresh scientific discovery reveals to us more clearly that "the reign of law" extends over the whole material universe, that events apparently the most fortuitous take place according to certain fixed and invariable laws. What reason have we to suppose that the world of mind is, or can possibly become, exempt from a similar restraint? All our experience tends to prove the contrary, that the whole world of mind as well as the whole material world is under the dominion of laws from which it cannot possibly escape. Consider how the mind acts when it acts most perfectly. Take the process of scientific discovery, what is described in that wonderful book *Middlemarch* as "that delightful labour of the imagination which is not mere arbitrariness, but the exercise of disciplined power, combining and

constructing, with the clearest eye for probabilities, and the fullest obedience to knowledge, and then, in yet more energetic alliance with impartial nature, standing aloof to invent tests by which to try its own work." (Book ii. c. 16.) Can activity of this kind be conceived apart from the control of law? Is it not obedience to law which enables it, supports it, and ultimately crowns it with success?

But it may be said, 'the entire removal of the restraint of law is not contemplated even by the popular notion of liberty. Mr. Mill himself allows, as you have shown, large exceptions to the liberty which he claims. The true idea is rather this: that laws should be laid upon those who still need them; and that those should be set free who no longer require control.'

This is at any rate a possible answer to the question I have asked, whether the removal of restraint is the true idea of intellectual liberty. But it is certainly not a satisfactory answer. It is really only the withdrawal of a certain class of persons, those who are assumed still to need control, from the operation of the general rule which is left unaffected, that intellectual liberty consists in the removal of restraint.

The answer diminishes more or less the area of the objections to this popular view of intellectual freedom, but it leaves the objections themselves untouched.

We must turn then to the other mode of freedom. I have said that the mind may be called free if it is subject to no law, which I have shown to be contrary to experience, and to our very idea of liberty of action; or it may be called free where its will is so entirely in accord with the law that there is no opposition between them: the law does not interfere with its power of doing as it wills. By bringing the will into accord with the law, it is plain that the opposition of the law to the will is removed, and the mind can follow the bent of its will without being thwarted or hindered. A person whose will is set upon doing something which is opposed to the law, but who abstains from doing it for fear of the penalties of the law, is not really free; but when his will is altered, and he obeys the law, not from fear of the penalty, but because his will is brought into accord with the law, then, though the law remains, he is truly free. It is obvious that freedom of this kind can be good only when the law is good.

The object of the intellect, its highest good, is truth. When the

mind therefore acts voluntarily in accordance with the laws of truth, it acts freely, it enjoys real intellectual liberty, and this intellectual liberty is a good which justifies the enthusiasm it has aroused. It is no restriction of the liberty of the mind to be led from error to truth. Truth is one, error is manifold; but truth is the proper object of the intellect; and the mind which has grasped truth does not crave for the liberty of error—it finds its real liberty in the exercise of the power of entering further and further into the domain of truth, a power which is continually enlarged as it is brought more and more into accord with the laws of truth, and acts under their control. The liberty of the mind is restricted by doubt and error as the liberty of the body is restricted by weakness and disease, and as it is with the body, so with the mind—*tanto liberior, quanto sanior*.

This kind of liberty, which is attained by the mind being brought into accord with law, is good, I have said, where the law is good. It must be best where the law is best; perfect where the law is perfect. But the perfect law is what Plato calls “the idea of good . . . the universal author of all things beautiful and right, parent of light and the lord of light in this world, and the source of truth and reason in the other.” (*Rep.* lib. vii. p. 517. Jowett’s trans.) But we are not Platonists, we are Christians; and we say plainly therefore that this law is the will of God, “whose service is perfect freedom.” True intellectual liberty then consists in the bringing of the human will into accordance with the divine will. “Where the Spirit of the Lord is, there is liberty.”

And how is this to be accomplished? and what hinders its accomplishment? The chief hindrances are the perversion of the will by passion, its misdirection by self-interest, and its distraction by unworthy motives. There can be no question that the passions do affect not only the moral but the intellectual faculties; they do fatally hinder and pervert the action of the mind.

“The will of man cannot be called free,” says S. Augustine, “as long as it is subject to the passions which conquer and enslave it.” (Tome ii. p. 593. Migne’s ed.) Plato calls the passions “leaden weights which drag men down and turn the vision of their souls upon things that are below” (*Rep.* lib. vii. p. 519); while, on the other hand, our English Platonist, Henry More, declares that “clearness of knowledge proceeds out of purity of life.” But the will is not only perverted by passion, it is misdirected by self-

interest. It chooses a lower good, or a good that is merely apparent in preference to a higher or real good, because the former seems to promise a greater immediate advantage. It makes of knowledge itself, as Bacon says, "a shop for profit or sale." Where the mind is thus misdirected, it soon becomes so absorbed in the objects it has chosen that it is difficult to attract it to loftier ends. And this difficulty is continually increased by the growing power of habit.

The mind, however, that casts off the "leaden weights" of passion, and avoids the misdirection of self-interest, may yet be greatly hindered and thwarted by the power of unworthy motives, by the bias of prejudice, the love of reputation, the desire of excitement or amusement, the fear of failure, or the vanity of success.

All these things, it is trite to say, hinder the will from being brought into accordance with the perfect law, and so prevent the attainment of true intellectual liberty. But these hindrances may be overcome, and the will brought into accord with law, either by a power acting upon it from without constraining it, or by a power enabling it from within. This latter, the enabling power, belongs to the province of theology, and I will not discuss it here. The constraining power is discipline, directed not to the mere outward act, but to the will through the act, by the formation of habits. Discipline may be exercised by the person himself over himself, choosing to do or to give up this or that according to certain determined rules; or it may be exercised by another over him, as in the case of children, or of adults who have chosen to put themselves under instruction or obedience. But in either case, if consented to by the will, and used for the purpose of bringing the will into accord with a law that is recognized as good, it is not an infringement of liberty, but a help to the attainment of true liberty, intellectual and moral. Without discipline study is impossible. The student must be under control. If he would gain much, he must give up much. If he would learn much, he must dare to be ignorant of many things. He must be guided in everything by rule, by law; and in this, his willing obedience to law, his true liberty consists. It is so in natural philosophy, in all experimental science. Obedience to law has been the Open sesame which has unlocked to the modern inquirer the great treasure-house of Nature's secrets. *Naturam vincimus sequendo* is the great principle of modern discovery, "Ruling by obeying Nature's powers." And if less obviously, it

is not less truly the principle of all other learning. Order and method are the very initial conditions of study, and they are the guides of its highest achievements. But order and method necessarily imply the bringing of the will into accord with law—the surrender of much in order to attain more.

The student must be an ascetic. He must submit voluntarily to hardship for the purpose of gaining control over the lower part of his nature—over the passions of the body and the desires of the mind. *Schola crucis, schola lucis*—this is the true motto of all mental as well as moral effort, the promise of its reward. But all this, simple and indisputable as I think it is, seems to me wholly contrary to the popular doctrine of intellectual liberty—“Absolute freedom of opinion and sentiment on all subjects, practical or speculative, scientific, moral, or theological.” And what appears to me, therefore, to be the great practical harm of the popular notion of liberty is this—that it tends to discourage quiet and patient study under rule and method, and to provoke and attach an utterly unreal importance and value to intellectual eccentricities and vagaries. And it does this at a time when all the predominant mental and moral faults are such as require discipline and obedience for their correction. It is a time of much intellectual activity without high intellectual power, of much mental excitement without much mental stability—a time in which there is little of the “calmness and confidence” that give true mental as well as moral strength. I believe that our devotion to comfort is destructive of all high aims and great achievements in science, art, literature, and religion. But however this may be, it will hardly be denied that self-indulgence and ostentation, excitement and distraction, self-will and disregard of law, are prominent faults of our time, and sources of much mental and moral weakness. Yet at such a time, and in the presence of such faults as these, a liberty which consists in the all but entire absence of restraint—a liberty most nearly akin to licence—is proclaimed and accepted as the great social and intellectual gospel; while hints are not wanting that its principles may be applied ere long to the field of morals, which they are certainly wide enough to cover. Of course such a system discards and despises anything like asceticism. From its point of view the ascetic is a “narrow theory of life,” patronising a “pinched and hide-bound type of human character.”

Asceticism in its extreme has been generally a revolt against

the extremes of luxury or of violence. The asceticism of the hermits was a protest against the shameless luxury of the later Empire; the asceticism of the monks was a protest against the rude violence of the early mediæval life; and isolated cases of extreme asceticism have generally been provoked in a similar way. It would not be difficult, I think, to prove that the benefits rendered to society even in these extreme cases more than counter-balanced any harm that may have been done. But the principle of asceticism is simple and, one would think, innocent enough. It is the conquest of self—the exercise of the will in overcoming all distracting passions and desires, and in concentrating itself upon what it perceives to be “the first Good, first Perfect, and first Fair.” I can see nothing narrow in this, nor any tendency to cramp or dwarf the nature. Mr. Mill himself allows that a restraint may be put upon the selfish part of our nature for the sake of others (p. 37); and why not for our own sake? The restraint put upon us for the sake of others may be against our will; but the very essence of our submission to restraint for our own good is that it should be voluntary; not *ex necessitate*, but *ex caritate*. And its object is not the crushing of our affections, but their right direction. It is not the clipping of trees into pollards, to which Mr. Mill compares it, but the removal of what hinders their free growth in obedience to the true laws of their nature. The doctrine of asceticism is not peculiar to the Christian faith. It has found a place in all religions that have been lasting or widespread. It is not even peculiar to religion. It is the doctrine of Plato as well as of St. Paul. It is an intellectual as well as a moral discipline, and its object is not to cramp, but to enlarge the faculties; not to enslave, but to liberate the intellect; not to extinguish, but to elevate the affections. Seen from without, like some high-walled mediæval city, it may appear dark, cold, and forbidding; but to those who are within, its walls are strength, and its dwellings are homes of peace. Let me read to you (I hope I need not apologise for reading it) one of the most exquisite lyric poems in the English language. It is a picture of the ascetic life by one who has lived it:

“Unveil, O Lord, and on us shine
In glory and in grace;
This gaudy world grows pale before
The beauty of Thy face.

Till Thou art seen, it seems to be
 A sort of fairy ground,
 Where suns unsetting light the sky,
 And flowers and fruits abound ;
 But when Thy keener, purer beam
 Is pour'd upon our sight,
 It loses all its power to charm,
 And what was day is night.

* * * *

And thus, when we renounce for Thee
 Its restless aims and fears,
 The tender memories of the past,
 The hopes of coming years,
 Poor is our sacrifice, whose eyes
 Are lighted from above ;
 We offer what we cannot keep,
 What we have ceased to love."

Has asceticism cramped that intellect, or pinched that heart ?

But I must turn from this, its religious use, to what more immediately concerns us here—its intellectual value ; and in doing so, I would ask you to remember that we have no other warrant than convenience and clearness of language for speaking of the moral nature and the intellectual nature, and of the different faculties of the mind, almost as if there were different agents existing within us. It is the mind itself which understands and wills and remembers, and it is according to the object-matter of these different acts of the mind that we call them religious, or moral, or intellectual. Asceticism therefore, which in itself is merely a discipline, may be directed by the mind to religious, or moral, or intellectual uses. Men may become, to use Wordsworth's phrase, anchorites of knowledge as well as of piety. For increase of knowledge and wisdom then, as well as for moral good, the mind may submit itself to rule—may set itself, by the exercise of its will, to conquer whatever of bodily passion or of mental disorder hinders, disturbs, or distracts it in its efforts to move freely through the realms of Truth. It is only by such discipline, vigorously and persistently employed, that the mind can acquire and maintain its true liberty ; for it is only thus that it can escape from the multitudinous distractions and allurements of the world, from error and from doubt. Such discipline involves the renunciation of much that is agreeable and attractive. The love of beauty and of knowledge, and even of good, may be dangerous, if they are not rightly

loved. This is the lesson of Tennyson's *Palace of Art*, where the soul sits in "God-like isolation,"

"Holding no form of creed,
But contemplating all,"

until it falls inevitably and deeply from its "lordly pleasure-house." This renunciation of what is agreeable and attractive—the choice of a good loftier though more remote, in preference to one nearer at hand, but lower in kind or in degree—implies no sourness nor moroseness of temper, nor does it involve the loss of any real happiness; for our real happiness consists, not in what we have, but in what we are. This is the truth which "our sage and serious poet" Wordsworth tried to teach three-quarters of a century ago, which in his writings he teaches still—vainly then, and vainly, it seems, now; for after more than seventy years of what is called progress, these verses remain as true as when they were first written—

"O friend! I know not which way I must look
For comfort, being, as I am, opprest,
To think that now our life is only drest
For show; mean handywork of craftsman, cook,
Or groom! We must run glittering like a brook
In the open sunshine, or we are unblest;
The wealthiest man among us is the best:
No grandeur now in Nature or in book
Delights us. Rapine, avarice, expense,
This is idolatry; and these we adore;
Plain living and high thinking are no more:
The homely beauty of the good old cause
Is gone; our peace, our fearful innocence,
And pure religion, breathing household laws."

ON ARCTIC EXPLORATION.

ABSTRACT OF MR. F. E. FOX'S PAPER.

(Read October 21st, 1875.)

OUR historical knowledge of the Arctic Regions dates from the narrative of the early Norse colonists, who, led by the report of Flokko, the pirate, followed Ingulf to Iceland in 874 A.D. In 982 Eric the Red discovered Greenland. His adventurous son Leif introduced Christianity in the year 999, and two years later pushed forward the Norse discoveries to the shores of America, when the colony of Vinland was soon afterwards established by Thorwald. This settlement was visited by a bishop of Greenland in 1121. The chief Norse colony retained its connection with Norway till about the fourteenth century, when, contemporaneously with the decay of Norse power in Europe, the Greenland settlers were eventually driven out by the Eskimos. A gap of two hundred years follows, during which we have no records of the Arctic Regions.

The question may now be asked, Who were the Eskimos? They are first spoken of by Thorwald, on the American coast. He called them contemptuously *Skrællings*—chips or parings. The theory brought forward by C. Markham, Esq., C.B., seeks to fix their origin in Northern Asia. When Tugrul Beg went forth “to the conquest of the whole earth,” Shaibani Khan, and 15,000 families passing north, became the founders of the tribe of the Iakhuts, still existing at the mouths of the Polar rivers. This tribe drove out the Omoki (a people of fishermen), the Chelaki (having reindeer), the Tungusi, and the Iakhirs. The Oukilon, once numerous, are also gone. The ruined remains on Cape Chelagskoi have been found identical with those on the shores of the Parry group of islands. 1140 miles of unknown sea, or land, or ice intervene; but land has been repeatedly seen in this space, since its first observation there by Admiral Wrangel. The Eskimos can be traced by their relics from Bank’s Land to Baffin’s Bay, 540 miles. Mr.

Markham thinks that the Eskimos, passing in small parties to the north of Barrow Straits in the 14th, 15th, and 16th centuries, may have divided into two main bodies; the one going northward and originating the Arctic Highlanders, discovered by Ross; the other descending southward, and driving out the Norsemen from Greenland.

The theory of Dr. Rink supposes the Eskimos to have come from an entirely different quarter. He conjectures them "to have been the last wave of an aboriginal American race, which has spread over the continent from more genial regions, following principally the rivers and watercourses, and continually yielding to the pressure of tribes behind them, until they have at last peopled the sea coast."

On the subject of *climate*, it may be interesting to note the variable latitude of the boundary of the Treeless Zone, ranging from 57° N. in Labrador to 71° N. at the Lena river. The mean temperature of the country of the Arctic Highlanders, in latitude 76° to 79°, is placed at an average of +38° in the warmest, and -38° in the coldest month of the year.

The names of Davis, Baffin, and Hudson recall the discoveries which led to the establishment of the whale trade, and of the great Hudson's Bay Company. Parry's two expeditions with the *Hecla* and *Griper*, and with the *Fury* and *Hecla* in 1821, 1822, and 1823; and those of Ross in 1818, and in 1829 to 1833, must hardly be passed over in silence. During the latter period of five years Ross's expedition was supposed to be lost, but was eventually rescued by the *Isabella*, bringing back the intelligence of the discovery of the Magnetic Pole in Boothia Felix, in 1831, about lat. 70° 5', long. 96° 46'.

The narrative of the search for Sir John Franklin's expedition may be gone into at somewhat greater length. After passing their first winter at Beechey Island, the voyagers proceeded southward down Peel Sound in search of the North-west Passage. No tidings of them having reached England, great anxiety was felt, and some fifteen expeditions of search were organized from England and America by land or sea. After the discovery of the position of their winter quarters (1845 to 1846), and of various relics in the hands of Eskimos, near the mouth of the Great Fish River, or of the districts about Boothia Felix, the area of search seemed very much concentrated to the icy seas and coasts round King William Island.

To explore this area the steamer *Fox* was fitted out by Lady Franklin; and the present Sir Leopold M'Clintock having received the command, was successful in carrying out the object, by the aid of sledge parties, in the spring of 1859. By these parties the skeletons of three bodies were discovered, and a great quantity of relics, and a record made on an Admiralty form, which told of the death of Sir John Franklin, of the abandonment of the ships, and of the terrible attempt of the survivors to escape on foot to more hospitable shores.

The sufferings of Dr. Kane's party in searching the Smith Sound district, and attempting to prosecute northern exploration, form a thrilling episode in the history of the search for Franklin.

With regard to the more immediate aspect of the question of general Arctic discovery at the present time, the special objects to be attained may now claim some consideration. Among these may be placed the determination of the exact figure of the globe; the measurement of the precise length of a degree in the polar district; and the obtaining of experience in ice navigation preparatory to Antarctic observations in connection with the transit of Venus in 1882; the discovery of the North Pole, and of any representatives of the human race who may possibly exist in these remote regions. Traces of Eskimos have been found almost as far north as discoverers have yet penetrated.

Magnetic observations being alluded to, photographs were exhibited of one of the dipping needles invented by R. W. Fox, Esq., F.R.S., for the purpose of ascertaining with great accuracy the amount and intensity of terrestrial magnetism. This particular instrument was prepared by Mr. Olive, of Falmouth, for the present Arctic expedition. It was through the aid of this invention that the approximate position of the South Magnetic Pole has been demonstrated. The exact spot has not been reached, but the area in which it lies has been successfully indicated.

The avenues of access by water to the great circumpolar area are three in number; viz., first, by Behring's Straits; second, by the great opening between Greenland and Norway, on either side of Spitzbergen; and third, by Smith Sound.

Many expeditions, from Sweden, Germany, and Austria, have pursued scientific research in the region of the second of these openings during the past ten or twelve years. Some of the more interesting of these have been the German expedition under Capt.

Koldewey, with the *Germania* and *Hansa*, in 1869; and the Austrian expedition under Lieut. Payer, in the *Admiral Tegethoff*, in 1872. The drift of the *Hansa*, and her final abandonment off the east coast of Greenland, and of the escape of the crew to the settlements on the West Coast, are subjects well worthy of attention.

The Austrian expedition started with the intention of pushing its way along the north of Siberia; and while failing in its original object, attained one of great importance in the discovery of a new tract of Arctic land about lat. 79° to 80° to the north of Nova Zembla.

In the year 1871, the American Captain Hall proceeded with the *Polaris* and an ill-assorted crew up Smith Sound, and succeeded in wintering about lat. 82° . Land was reported by this expedition to have been seen much further to the north. Poor Hall never returned; but his was the only life in the party that fell a sacrifice. The remainder abandoned the vessel, and made good their escape. At the present moment this voyage is of great interest to us, as our own Arctic expedition has started with the intention of passing over a route so very similar to that pursued by Hall.

Last year the *Alert* and *Discovery* were fitted out, and placed under the command of Captain Nares, for the object of reaching the North Pole. After a stormy passage they arrived at the Greenland Settlements, attended by the *Valorous*. On the 6th of last July they anchored at Disco, the valleys and gorges of that remote Arctic island being in their gay summer clothing of mosses and wild flowers. Having obtained coal, &c., they proceeded to the north, and were seen for the last time by the *Valorous* on July 17th.

All our subsequent information has been supplied by the *Pandora*. This vessel, under Captain Allen Young, accomplished a remarkable voyage. Leaving Southampton, and touching at Plymouth, she followed the Arctic expedition to Greenland; then entering Lancaster Sound, she proceeded, almost without hindrance, till her further progress through the north-west passage was entirely stopped by the ice in Peel Sound, a little to the north of the spot where Franklin's ships were lost. Turning homeward, she succeeded in obtaining from a cairn on the Carey Islands some documents deposited there by Captain Nares, and thus brought back in October the welcome tidings of the prosperity of the *Alert*

and *Discovery*, and of the prospects of a favourable season for their passage northwards up Smith Sound.

According to the instructions of the Arctic Committee of the Admiralty, it was proposed for the two vessels to press north to about the position of Hall's winter quarters in the *Polaris*. The depôt ship, the *Discovery*, was to attempt there to winter, about lat. 82°, and the advance ship, the *Alert*, was to push on, and winter, if possible, in some position not more than two hundred miles to the north of the *Discovery*. Cairns were to be erected, and documents carefully left behind in them or near them, on conspicuous points of the coast, so as to afford a clue to any parties of search who might hereafter attempt to reach them. It might be deemed needful to pass a second winter, if the results obtained during the present spring and summer were not considered adequate. The commanders would not hesitate eventually to abandon the vessels, if needful, and to secure the safety of their crews by returning on foot along the shores of Smith Sound to the settlements of Greenland.

NOTE.—Since the delivery of the above lecture, it is understood that the *Pandora*, under Captain Allen Young, is being prepared to proceed, about the 26th of the present May, to the Smith Sound district, in order to attempt to bring back letters from the expedition. It was the intention of Capt. Nares that a party should be sent south this summer from the vessels.

THE PROSE WRITINGS OF JOHN MILTON.

ABSTRACT OF MR. W. HARVEY'S PAPER.

(Read November 18th, 1875.)

THE lecturer referred in the first instance to the comparative disregard of Milton's prose works. Milton became a politician and controversialist rather from the excited feeling and great events of his period than from any inherent love of such topics.

Milton's college career and early manhood evinced his lofty genius, and on many occasions his uncompromising independence, while glimpses of a tendency to the Puritanical sternness of his after life are not wanting.

The college themes which have been preserved are interesting, not only for their great merit, but that many thoughts are germinated there which are expanded in fuller vitality in "L'Allegro," "Comus," and "Lycidas." Milton now became drawn into the fierce ecclesiastical controversy of the period, and placed himself at one bound at the head of the anti-episcopal party. His great research, learning, and acquirements, probably superior to that of any man of his day, were all thrown into whatever he wrote. His onslaught on the bishops was continued by several successive treatises.

The whole nation were at this time aroused in the great struggle for religious and political liberty.

The narrow tyranny of Laud, the ill-advised and vacillating despotism of Charles, had produced their natural results: they had sown the storm and reaped the whirlwind. At this time Milton had the misfortune to form an unhappy marriage; this and the desertion of his wife led him to write freely on the whole question of marriage and divorce. His divorce treatises, although full of vigour, are the least palatable of his writings, and throughout the whole of them we may see traces of the individual smart which led to their appearance.

Horror of the new doctrines led many of the clergy to attack Milton; and being in danger of impeachment, he published one of the greatest and most eloquent treatises on the freedom of the press. It is scarcely too much to say that the "*Areopagitica*" is the most eloquent book in our language. Milton now became the acknowledged champion of the Commonwealth. The "*Tenure of Kings and Magistrates*" and the "*Eikonoclastes*" were powerful influences in these distracted times, and the defence of the Commonwealth had no mean influence in settling the power of the Protector, and gaining the acknowledgment of foreign powers. On every subject on which Milton wrote we notice the same trenchant logic, the same obstinate reference to first principles, the deepest learning, a perfect mastery of language, and frequently a grand and lofty eloquence which is almost unsurpassed.

The temper and habits of controversialists of the day certainly led him at times beyond what we should now consider the bounds of decency, but this was common to both sides of the question.

Whatever opinion there may be as to the sincerity of other politicians of the time, of Milton's there can be none. He employed no arts to raise himself while in power, and when adversity came he suffered poverty and humiliation at the hands of his enemies. We have reason indeed to be thankful that in this adversity he turned once more to those consolations of heroic verse from which all future generations have derived more than words have power to express.

THE GEOLOGY OF PLYMOUTH.*

BY R. N. WORTH, F.G.S.,
Hon. Member Plymouth Institution, &c.

(Read November 25th, 1875.)

INTRODUCTION.

It is now forty-five years since there appeared in the first volume of the Transactions of this Institution an elaborate survey of the geology of the country near Plymouth, written by our distinguished member, the late Mr. John Prideaux. That paper contained a statement of the petrology of the district as accurate as was then possible, and still remains in this particular of very high value. Written, however, in the very infancy of stratigraphical geology, many of its conclusions are to our modern view erroneous, although it is remarkable how far in several respects Mr. Prideaux went before his time, especially in his identification of the rocks on the eastward of the Sound with the Old Red Sandstone, and his suggestion of an allied origin between certain rocks then called Greywackè and the Greenstones. Furthermore, it was the first attempt to systematize our local geology, and entitled to respect on that ground also.

Mr. Prideaux was not alone in these geological labours. A few years before he wrote there had been published by another eminent member of this society, the Rev. Richard Hennah, "A Succinct Account of the Limerocks of Plymouth," which conclusively established what had been strenuously denied—the existence of organic remains in our Plymouth limestones. This work was the result of years of patient labour, carried on with very few aids, when

* It will be understood that in this paper the aim of the writer was to present a general view of the whole history and conditions of the local geology. Much yet remains to be investigated, especially in the important department of Palæontology, which it is hoped may be treated on a future occasion.

geological science was hardly recognised in the West of England, except by a few scattered observers. Alike in the date and character of his researches, Mr. Hennah is entitled to be regarded as the father of our local geology.

And there is another local investigator of geological phenomena, a third member of this Institution, to whose writings I am likewise bound to refer. Mr. J. C. Bellamy, in his "Natural History of South Devon," published in 1839, recorded a number of important facts connected with the geology of this neighbourhood, very different in value to the crude generalizations and hasty theories which, misled by the imperfect knowledge of the time, he put forth.

If by the aid of the wider investigation, systematized conclusions, and clearer acquaintance with the workings of Nature, of the present day, I am enabled now to present a fuller and more accurate view of the history and conditions of the geology of Plymouth and its neighbourhood, I desire at the outset to express my sense of the value of the labours of those who have gone before, and of the honour they conferred upon this Institution. And if I do not mention the names of others associated with us who have done good work in this direction, it is partly because happily they are yet upon our muster roll, partly because I shall have special cause to express my obligations to them as my work proceeds.

It is my desire to bring the results of the labours of other investigators, with my own, into one connected whole, and to give as complete an account as is here possible of the conditions of our local geology, viewed in the light of modern science.

DEVONIAN ROCKS.

Geologists long hesitated in opinion concerning the exact place of the older rocks of Devon in the geological scale—the relative chronological position which they occupy. When stratigraphical geology was in its infancy, the rocks of this locality were frequently assigned a higher antiquity than that which any one would now allow. Playfair, in 1802, said that there were no rocks of a more distinctly primary appearance than those around Plymouth; and thence opinion veered to the view that they were what in those days was called Transition. Sir Henry de la Beche, in his earlier publications, with certain of his predecessors, classed them under one of the most general and indefinite of geological terms—based chiefly on lithological likeness to certain rocks in Germany, so

called by the miners—Greywackè. The local geologists of his day, however, applied that term specially to trappean and altered slaty rocks.

To Professor Sedgwick and Sir R. Murchison we are indebted for that identification of the places of our chief Devonshire rocks which is now generally, though in somewhat modified forms, accepted. The bulk of the rocks of the centre of the county they classed as Carboniferous; those bounding them north and south as of the Old Red Sandstone period, for which they proposed the term Devonian. The idea that the latter rocks were Old Red was not absolutely new. Mr. Prideaux spoke of the sandstones of Bovisand as having that character. Mr. Lonsdale, in 1837, suggested, on palæontological grounds, that the South Devon rocks would be found to occupy an intermediate place between the Carboniferous and Silurian systems. Sedgwick and Murchison were then engaged in their investigations in the district; and as the result in 1839 announced this as their conclusion.

Though the identification of the rocks of North and South Devon as of Old Red age is generally accepted, the acceptance is by no means universal. There is no question that these rocks are intermediate between the Silurian and the upper part of the Carboniferous systems, but there has been much question whether in truth they are really Devonian or Old Red Sandstone at all, and whether they are not lower members of the Carboniferous formation.

I shall not venture into this controversy, but only indicate its leading features.

The first to assail in any formal and set form the conclusions of Sedgwick and Murchison was the late Mr. Jukes, who held that while there were undoubtedly rocks in North Devon of Old Red age, most of those so classed were Lower Carboniferous. This interpretation he based on his intimate knowledge of the geology of the South of Ireland. Subsequently Mr. Jukes advocated the opinion in its complete form, that the Devonian slates and limestones which contain marine fossils (and in these our Plymouth rocks are included) are superior to the Old Red Sandstone.

Mr. Jukes expounded his hypothesis in full detail before the Geological Society of London in 1866; dealing then with the rocks of North Devon. In 1868 he read a paper before the Geological Society of Ireland, in which he set forth the results of his examination of the rocks of South Devon and East Cornwall.

Mr. Etheridge, in reply to Mr. Jukes, contended chiefly, but not exclusively, on palæontological grounds, that the Devonian rocks of North Devon (and therefore from their correspondence those of South Devon) are chronologically equivalent to the whole of the Old Red Sandstone.

And while Mr. Jukes and Mr. Etheridge thus represent the extreme views on either side, there are various shades of opinion held between. I shall only quote one more hypothesis, and that not merely because it is put forward by our most distinguished local geologist, but because it seems to me, so far as I have any pretensions to form a conclusion on the matter, to represent very nearly the exact state of the case. Mr. Pengelly, so far back as 1863, suggested that the acknowledged Old Red beds of Scotland and elsewhere, with the Devonian beds, collectively but not separately, fill up the Siluro-Carboniferous interval, the Lower Devonian beds being on the same horizon as those of the Upper Old Red; and the Middle and Upper Devonian between the Upper Old Red and the Carboniferous.

The Devonian rocks, whatever view may be taken of their collective position, are generally divided into three groups—upper, middle, and lower, each of which has representatives on either side of the great culmiferous trough of the centre of the county. Originally the Plymouth rocks were classed as Lower Devonian. They now rank as Middle, with the rocks of Ilfracombe, Bradley Valley, Wolborough, Babbicombe, Dartington, Berry Head, and other limestone districts; those of Lynton, Meadfoot, Mudstone, Looe, Polperro, and Fowey being Lower; and those of Petherwin, Baggy Point, Pilton, Tintagel, &c., Upper. The Devonian rocks of Plymouth may be treated as subdivided by their limestones into upper, middle, and lower likewise.

Let us for a moment recapitulate the conclusions at which we have arrived. The centre of the county is occupied by strata of Carboniferous age, with the granite of Dartmoor on their southern flank. Northward and southward the Carboniferous area is bounded by Devonian rocks. On the east Triassic—New Red Sandstone—rocks extend from Watchet to Torquay, with a singularly irregular outline. Eastward again, in the corner next Dorset, a comparatively small surface is occupied by Liassic and Cretaceous deposits.

With these latter we have little to do; but there is a small patch of Metamorphic rocks between the Start and the Bolt Tail—

coloured in the Geological Survey Maps as altered Devonian, which has considerable local interest. The point cannot be regarded as settled, but to me there seems little doubt, though the conclusion is one rather of inference than evidence, that they are of Lower Silurian age; that they form part of the same series as the rocks of the Dodman and Gorran Haven in Cornwall, which are admittedly Lower Silurian; and that we must associate with them the Eddystone reef, which lies on the line of strike between the two, and the chief rock of which is of a metamorphic character. Mr. Prideaux called it gneiss. If I am right in regarding the Eddystone as the link between those apparently detached Silurian fragments, we must fix the southern limit of the Devonian rocks of Plymouth at or near that point. The northern will be found in the Carboniferous rocks of Tavistock. The granite of Dartmoor occurs somewhat nearer on the east, its closest point being an isolated patch between Newnham and Hemerdon.

And here let me correct a misconception which has been handed down from the infancy of geological science. Granite is commonly spoken of as a primary rock. It is nothing of the kind. There are granites of different ages, as there are slates and limestones. The Dartmoor granites are of three periods. The oldest is of later date than the Carboniferous rocks, through which the whole have been elevated; therefore much inferior in antiquity to our own rocks here. The fact that granite pebbles of all three varieties occur in the Triassic Conglomerates shows that they are of older date than these beds. They may be of Permian age; but all that we can say definitely is that they date somewhere between the Carboniferous and the Triassic periods.* We may, as I have said, treat of the Devonian rocks of Plymouth under three divisions. The underlying slates and associated rocks ranging downwards from the granite; the limestones; and the schistose and arenaceous overlying beds: the whole forming an ascending scale in the order named.

The strata around Dartmoor, in nearly all directions, dip away therefrom. The rocks in this locality have a prevalent southward dip, gradually increasing in extent from the granite, and more frequently varying to the westward of south than to the east. To this there are a few exceptions. Professor Phillips recorded in his "Palæozoic Fossils" the existence between Tamerton and

* This was first shown by Mr. Pengelly, F.R.S.

St. Budeaux of a narrow anticlinal—N. 10° W.; S. 10° E., with a cleavage nearly parallel to the northern dip, and striking N. 80° E. Between Egg Buckland and the Fort on the north, a northerly dip occurs N. 30° E., 60° ; whilst, a short distance to the southward, near the church, we find it S. 10° W., 35° . There is another anticlinal at Blackpool, near Lynham; and northerly dips are likewise found near Wolsdon and elsewhere.

The rocks of our northern or lower group are chiefly slates, of a bluish gray or drab. Good roofing slate occurs at Cann Quarry, and a few other points. Near Plymouth there is an abundance of purple and greenish slate, largely variegated. By Saltash there are a few calcareous seams, one of which was worked many years ago, at Moditonham, for lime. Associated with the slate are numerous bands of trap rocks—greenstones and ash beds, some of which graduate into the slates by such fine degrees, that it is hardly possible to distinguish where the one ends and the other begins. The more important trap bands are near Saltash. Others, less pronounced, may be seen between Knackersknowle and Plymouth. There are still more traps at Compton, Swilly, Ford, and Keyham; and immediately to the north of the limestone—forming the hill on which the Devonport Column is built, where it rises at the junction of the limestone and the slate; appearing in an almost identical position at the N.W. angle of St. Andrew's churchyard; and stretching along the top of the hill from Ridgway by Chaddlewood.

This trap-rock, called locally, in conjunction with some of the altered slate, dunstone, occurs in various forms. Near the surface it is generally of a dun or a reddish-brown, often vesicular, and commonly ferruginous, rotten through weathering. In depth it becomes bluish-gray in colour, and very hard. Occasionally it is amygdaloidal, as at Ford and Chaddlewood, where it contains large quantities of carbonate of lime, and may perhaps fairly be termed diabase. The sounder varieties are frequently used for building, and the tougher make excellent road metal. There are few hills in the area under review that do not contain either a trappean nucleus, or are not largely composed of one form of diorite or another. To its superior hardness, as compared with the slates in resisting denudation, no doubt many of these elevations owe something of their present contour.

Great part of these greenstones are undoubtedly the contemporaries of the rocks wherewith they are associated, and therefore of

Devonian age. This contemporaneity is clearly seen in the railway cutting above Weard Quay, not far from Saltash. Here we find a series of layers of trap interstratified with slate, more than a score in number, and varying from an inch to three feet thick. And here, therefore, the lava must have spread itself upon the sea bottom in successive sheets with comparative quietude, and at intervals sufficiently long to allow of the deposition of considerable layers of silt between.

Taking the whole of these phenomena together, they seem to indicate the special local influence of volcanic action, operating over a lengthened period.

I doubt whether the more southerly traps, those next the limestone, are contemporaneous. They seem rather to be intrusive—to have the appearance of being thrust into the positions which they occupy. I have no direct evidence to offer, but it is a fact worth noting, that the greenstone on the north of the Yealmpton limestone is clearly intrusive; nor do I think the fact that they contain large quantities of carbonate of lime without its value. If this suggestion be correct, these rocks may probably be of Carboniferous age; for we know that during this period there was a centre of great volcanic activity so near us as Brent Tor.

Now the whole of these northern rocks, with such exceptions as I have indicated, appear to have a constant southerly dip, at angles which vary from 80° to 10° , but can hardly be averaged at less than 55° or 60° . I say appear, because the cleavage planes are mostly well developed, and it is not easy—nay, at times impossible—to distinguish between the cleavage and the bedding. Still, there can be little doubt that the bedding and cleavage have a general coincidence. Are we, therefore, to infer that this single sub-section of the Devonian system has such an enormous thickness as this regular succession of conformable strata would seem to imply—a thickness that would have to be measured by miles? There is no absolute necessity that we should.

To me these rocks appear to yield evidence of having been thrown into numerous folds with a prevailing southerly dip, so that instead of having a succession of fresh beds southward, we have a frequent repetition. The anticlinals to which I have referred would thus be the remnants of such portions of the actual flexures as have not been denuded off. There is so remarkable a similarity in the slate rocks of this division, that it is by no means

so easy to trace these repetitions as one would desire. Still, there is evidence. The parallelism of the bands of trap near Saltash may be due to this cause. But that to which I would direct especial attention is the grouping of the purple and variegated slates in and near Plymouth. You will find them in the railway cutting at the Friary, at Lipson, in the railway cutting at Rosehill, and again beyond the little tunnel to the west of the Stoke Station. Each group of coloured slates is separated from the next by slates of the ordinary character; and I believe, that instead of having four sets of coloured beds, we have one set four times repeated; so that the total thickness of the strata exposed, instead of being 2,000 yards, is somewhere about 300. Moreover, this hypothesis, if correct, applies more or less to the whole of the rocks of the division.

Before passing on to the limestones, the occurrence of elvans should be noted. Elvans are rocks of granitic character, which fill fissures, and form dykes running across the country. They are thus intrusive. One elvan may be seen at Cann Quarry. There is another, porphyritic, at Roborough Down, which attained considerable local notoriety for building purposes under the name of Roborough Down stone. A third occurs near Jump. They cut through the slate beds, and have a general direction east and west.

Except in the vicinity of Saltash, there are no fossils locally in the rocks of our lower group, which in part are really Lower Devonian. Elsewhere important discoveries have been made; and the Lower Devonian rocks of Looe, Polperro, and Fowey, have yielded fish remains identical in species with some which occur characteristically in the undoubted Old Red. The sea bottom here may have been of greater depth.

We now come to the middle Plymouth group. When, many years ago, it was first stated that the Plymouth limestone contained fossils, the idea was scouted as absurd, though thousands are revealed in the pavements over which we daily tread, and though in the limestone cliffs which bound our shores corals eroded into prominence by the action of the sea and spray constantly occur. It required, however, long-continued labour on the part of Mr. Hennah fully to establish this fact. Now we know that our limestone is in great part made up of organic remains. It is in fact an ancient coral reef. A physical analysis of a fragment of Plymouth limestone by Mr. Sorby gave the following result:

Fragments of coral	12·3
Portions of encrinites	11·5
Organic clay	25·7
Crystallized calc spar	50·5
	<hr/>
	100·

After long ages of sedimentation and alternating volcanic action the bed of the ancient sea whereon we now live became tenanted by coral animals, and the formation of a coral reef began. Our limestone has every characteristic of a fringing reef; that is, of a reef following the main outlines of the shore at no very great distance from the land. How the reef-builders were introduced we cannot say. One thing is certain, the temperature of this old-world sea must have been warmer than that of our present waters. It must likewise have been shallow. Reef-building corals do not live in ordinary cases at a greater depth than twenty or thirty fathoms, rarely below fifteen. Hence there is evidence of great changes. Either the palæozoic sea had become shallower, because of the long-continued process of deposition, which is hardly likely to have been an exclusive cause, or its bed had been raised by forces from within. This is most probable, especially as we have so soon to call into play a return movement. The apparent thickness of our limestone, taking its breadth and average dip, is about 600 yards. There may be undulations which would greatly reduce this thickness; but I do not think so.

In any case the thickness is greater than the natural range of the building action of the coral animals; and therefore, to account for its formation, we must call in aid the process now in operation in the Pacific. Only a gradual and steady sinking of the land would enable the coral animals to build a reef of such extent. In a coral reef precisely analogous to those which now exist in the Southern Seas the Plymouth limestones then had their origin. But it may be asked, Whence the bedding, which indicates mechanical and not organic action? The answer is easy. In a coral reef growth and destruction are ever present. No kind of live coral reaches above a few feet in height, and the waves and winds are unceasingly grinding it down. The matter removed is deposited in and around the reef itself, consolidating and extending; and since, while our reef was subject to this double process, the ordinary form of deposition continued in the sea around, we

can at once account for the alternations of slate with calcareous shale observable on each side of the limestone. Whichever form of detritus predominated for the time, governed throughout its sway the character of the current deposit. At intervals silt and sand were cast upon the reef itself. Thus we account for the slates and sandstones (in part) which occur in beds or patches between the layers of limestone. Some of the sand-beds may be of later date, and attributable, as at Torquay, to Triassic sandstone filling up the joints produced by natural forces in a later age.

The depth to which our strata have been proved exceeds 300 feet. This was in the boring for the Victoria Spa, in Bath Street. The section was—

	Feet.
Earthy clay slate	20
Limestone	150
Blue slate	20
Red sandstone	3
Limestone	50
Sandstone	4
Red and blue slate	30
Dunstone	8
Earthy clay slate	20
Red sandstone	12

The slate appeared to come in in wedges. Allowing for dip, the actual thickness of the beds traversed would certainly not exceed two-thirds of these amounts.

There is sandy as well as slaty limestone. Treating a reddish-coloured arenaceous limestone from the Hoe with dilute hydrochloric acid, I found that 25 per cent. of its bulk consisted of a bright-red siliceous sand, exceedingly fine. The stone was of the kind known to the quarrymen as “hard head,” which occurs more or less intermixed with the limestone proper throughout its range.

The limestone forms a band half a mile in width, and nearly $6\frac{1}{2}$ miles in length. Its main western extremity is in Devonport Dockyard (there are detached beds on the other side of the water further west than Empacombe). It breaks off on the east about Sherford. Its general elevation is much lower than that of the slate hills, averaging about a hundred feet; and whilst its summit line has been truly described as being level as a wall, its continuity

is broken at several points. The Tamar, after rounding its western extremity, passes through it at Cremill; the Plym has a narrow channel at Cattedown; and at Stonehouse Pool, Millbay, and Sutton Pool, the waters of the Sound find access through the barrier to basins worn out of the slate rocks behind.

The limestone varies much in colour, structure, and dip. Its most constant features are its crystalline character, and the regularity of its divisional planes. Both on the north and south it graduates into the slate through calcareous shale. Bedding is frequently indistinct, and in some central parts of the mass apparently non-existent. It abounds in fossils—chiefly coralline in its more massive portions; whilst some of the exterior beds have yielded large quantities of bivalves and univalves; and others, with the adjoining slates, are remarkably fruitful in crinoidal remains. In texture it is generally highly crystalline, and in colour very various, ranging from black, through red, yellow, brown, dove and gray, to white. There is a marked increase of dip from north to south. Whilst on the northern edge the dip varies from 20° to 40° ; on the southern it runs from 60° to 75° . At Cattedown there is a shallow synclinal and some undulation, but the prevailing dip is towards the south.

Both the joints and the crystalline structure of the limestone are due to causes subsequent to the formation of the reef. To subsequent causes also must we attribute the fact that portions are dolomitic, containing a large quantity of magnesia, which has been exchanged for the lime. In the Yealmpton limestone dolomite abounds.

And now to return to our reef. At length the building came to an end. There may have been a descent of the ocean bed too rapid for the builders to keep pace with. They may have been overwhelmed by some great discharges of detrital matter; they may have perished in a fresh outbreak of volcanic forces, though recent volcanic action does not in all cases absolutely prevent the growth of coral. But they did not disappear finally without a struggle for existence.

And then we enter the third division of our local system. Its characteristic is sandstone, but this does not immediately appear. The rocks of this group are best studied, though they continue across the Sound, on its eastern side, from Mount Batten southward. They present an interesting but most complicated study.

Slates, limestones, shales, grits, ash beds, and sandstones alternate with each other in very remarkable fashion, while faults and contortions by no means simplify the riddle. Mr. Jukes hints that these rocks—their prevalent southerly dip notwithstanding; for in dip and strike they follow the general rule of the district—may be really under and not over the limestones, brought up by an inverted anticlinal. He seems to have been chiefly led to this by the similarity of the rocks between Batten and Bovisand to some Carboniferous rocks of Ireland. But this is only a suggestion; and while this third division appears to be cut off on the west between Millbrook and Tregantle, on the east its rocks certainly extend to Torbay. Dr. Holl points out the strong family likeness between our own upper rocks and the succession of rocks on the Dart; and I have traced some of the most characteristic of the Staddon beds occupying much the same relative position towards the Yealmpton limestone that they do towards the Plymouth.

I give the descriptions of this group by Sedgwick and Murchison and Professor Phillips with my own notes.

SEDGWICK & MURCHISON.

PHILLIPS.

REMARKS.

Brown and yellow earthy slate, with pyritous stains and iron veins, some of which run in the form of strings nearly north and south. This mass alternates three times with beds of impure limestone, and the last bed occurs at Dunstone Point, where it thins out to an edge among the impure earthy slates. This part of the section may be considered as forming a kind of passage from the limestone to the super-incumbent beds.

Near Turnchapel red shales, yellow ochry beds, and purple masses of oxide of iron, form a parting in the limestone, and have a varying dip of about 70° to the south.

Laminated schistose beds, irregular beds of trappean rock with irregular and nodular admixtures of limestone, occupy the shore for some distance.

Some of the trap is schistose (? ash), yellow, with ochry spots as if the result of decomposition.

One of the ochry beds contains Petraie.

Some of the beds are largely intersected by quartz veins, which stand out like a network, the rock between being weathered away.

About midway a fault is observable, associated with a couple of minor faults. Here the dips and their directions vary from S. 20 E., 35° to E. 25°, and round to S.E. again. The slate which succeeds is dark and hard, less cleaved, and more jointed than usual.

SEDGWICK & MURCHISON.

Dunstone Point to Withy Edge — yellowish - gray and bluish-gray soft slate and quartz veins and coarse arenaceous bands.

PHILLIPS.

Bluish - gray schistose beds, dipping south-east, moderately yielding in gray slaty beds and nodular limestones Encrinites, Brachiopoda, Turbinolopsis, and some unenumerated shells. The limestone nodules contain black (? carbonaceous) spots.

Carbonaceous and gritty beds.

Argillaceous contorted schists.

Calcareous laminæ fossiliferous.

Schists.

Schists and then grits.

Laminated brown and red grits.

Schists.

Layers of nodular limestone with Crinoidea in argillaceous ironyschists; a band of slaty fragments and colour stripes are crossed by cleavage.

REMARKS.

The limestone near Dunstone Point dips at low angles. Some is horizontal.

There are flints on the beach in Rum Bay.

Extending three-quarters of a mile to Bovisand Bay, bright red and sometimes variegated sandstone, thick bedded and of coarse texture, sub-divided by bands of soft glossy red slate and red micaceous flagstone; overlaid by a reddish slate and flagstone, which gradually passes into next division.

Red grits, hard, coarse. Purple schists and fossils in bands (Spiriferæ, Encrinites, &c.). This series is amazingly contorted, and contains ironstone layers and undulated quartz laminæ between the beds.

Red grits, with gray alternations often ripple-marked on the surface, and bearing much resemblance to the beds of Martinhoe in North Devon, appear to lie over the blue or purple fossiliferous beds; but the junc-

Dip of red sandstone above Bovisand Pier, 30° S. 20 E. amount variable, and here decreasing southward. Some of the beds appear almost horizontal.

In the road to Fort Staddon, at the back of the hill, easterly dips occur with curvature.

SEDGWICK & MURCHISON.

PHILLIPS.

REMARKS.

tions are complicated by amazing contortions; just as happens when in North Devon the Foreland sandstones touch the Linton gray beds. The red beds form a hill over Staddon Point, and dip to the south-east (45° and 70°), so as to sink below the sea rapidly near the centre of Bovisand Bay, where they are covered by steeply acclined beds of bluish, grayish, and whitish shales. Much contortion prevails here.

South of Bovisand Bay, earthy slate, passing into shale, with small nodules of ironstone, surmounted by various coloured earthy slates, alternating with reddish arenaceous bands, as seen on the cliffs of Crownall Bay, near the southern end of which is a patch of new red conglomerate, resting unconformably on the edges of the older strata.

Beyond Crownall Bay, reddish slate and flagstone and coarse red sandstone, occasionally contorted and penetrated by large quartz veins, passes into reddish, grayish, and greenish-gray chloritic slates, with hard quartzose bands and quartz veins.

Blue and gray shales, and with thin calcareous bands of Bovisand Bay. They are somewhat fossiliferous, containing Turbinolopsis, Crinoidea, Spirifer, and an Alga. Dip, $S. 40^{\circ}$.

Going South, micaceous gritty schist, white and reddish, dip $S. 50^{\circ}$.

Ripple-marked laminations.

White and reddish sandstones.

Blue shale, with grit seams much contorted.

At middle of Bovisand Bay, horizontal strata and beds with northern dip occur.

South of Bay, dark slates, dipping north at first, but immediately contorted to the south.

This brings the section so far as Yealm mouth. Beyond Yealm mouth to Stoke Point there are grayish and greenish slates, with quartz veins and occasional gritty beds.

Before I proceed further, it will be advisable that I should again cite the opinions in regard to this section of Mr. Jukes and Dr. Holl.

Mr. Jukes, as already noted, suggests the "possibility of these beds, 'so like the Old Red Sandstone,' which lie to the northward of Bovisand Bay, being brought up by an anticlinal, accompanied by inversion as well as contortion, and that this inversion may even affect the southern borders of the Plymouth limestone themselves." Messrs. Sedgwick and Murchison refer to the rocks of this section as bearing the closest resemblance to the rocks east of Coombe Martin; and upon this Mr. Jukes observes: "If the Coombe Martin limestones are on the same horizon as the Plymouth limestones, it is a strong argument in favour of inversion occurring at Plymouth, and that the sandstones which seem to be over the limestones there really come up from under them, as they certainly do in North Devon." Finally, referring to some of the contortions in Bovisand Bay, Mr. Jukes observes: "If beds could lie horizontally bottom upwards, for 25 yards, that inversion being only to be proved by the discovery of the small locality where the actual curvature of a distinct and recognizable bed happened to be exposed, what was there to forbid the possibility of beds lying in that position for 250 yards, or even 2,500, or more, and yet no direct evidence of that fact being anywhere accessible?"*

Dr. Holl takes the opposite view. "There appears to be on the east shore of Plymouth Sound, south of Mount Batten, and from the limestone of Brixham, along the river Dart, and the coast at Mann Sands, an upward series, though grey, blue, and purple slate, to the red grit, which rocks succeed each other conformably; and the limestones of Berry Pomeroy and Marldon are overlain by variegated argillaceous slates, surmounted at Blagdon Cross by red grits like those of Staddon Point and the banks of the Dart. No similar rocks, however, are seen rising up from below the limestone among the lower rocks north-west of Dartington and Ogdwell; nor are any such again brought up to the surface from beneath the limestone in the long downward succession of the beds between Plymouth and the Horrabridge station on the Tavistock railway."†

For my own part I hold that these rocks are really superior to the limestone, though I quite admit, and in fact believe, that here

* "Notes on Parts of South Devon and Cornwall," pp. 18-22.

† "On the Older Rocks of South Devon and East Cornwall." Proc. Geo. Society, April, 1868.

also, as on the north of the limestone, there has been repetition, and that the actual thickness of the series is much less than the apparent.

Perplexing as these rocks are, if we endeavour to indicate the exact relations of the different members of the series, it is not so difficult to recall the causes which issued in their formation. A continuance of that downward movement of the ocean bed which accompanied the building of the reef, combined with changes in the character of the detrital matter brought down by the rivers of the adjacent coast line, and subject to volcanic interference, will supply all the conditions required. The beds of limestone detached from the main body of the reef clearly indicate that whatever the causes which led to the disappearance of the coral animals they were not of instant effect. There was no great cataclysm, no sudden convulsion of nature. The ash and trap beds need no explanation. The grits and sandstones point to a change in the character of the matter brought down by the neighbouring river or rivers. The sandstones of Withy Edge show that the arenaceous influences, although gradual in their appearance, at length long predominated. The ripple-marked beds of Bovisand prove that when they were formed the waters must have been very shallow indeed.

Differences in the character of deposited rocks necessarily imply variations in time or changes in operation. All round the shores of the Sound may be seen the rocks of the future in process of construction—here a mudbank, there a sandy flat; here a layer of shingle, there a beach thickly charged with shells and the remains of other organisms; here again a bare water-worn rock, with sand or pebbles in its hollows. But all these formations that differ so widely are strictly contemporaneous, strictly the effects of the same system of causation. Take another illustration. Go up one of our Devonshire hillside lanes after heavy rain. You will see there a little gully, the bed of a miniature rain torrent. Where the road is steepest the gully will be worn and deep, cut down to the rock. If the road approaches a level the gully will expand, and much of the detritus brought down from above be deposited—the heavier particles first, and then, as the stream loses force, the lighter. And thus one river may have borne into this ancient sea either silt, or sand, or gravel, and shale, or sandstone, or conglomerate result.

All these rocks have undergone great changes since they were first deposited. We have no sedimentary rocks in this locality, setting aside the hypothesis of Mr. Jukes, of Carboniferous date. If there were ever any they have been removed; and although it is by no means improbable that the great culm trough of Central Devon thus far overlapped its borders no evidence remains; unless it be derived from those diorites which seem to be intrusive, and may be of Carboniferous time. When, however, at the end of the Carboniferous period the granite of Dartmoor was upheaved, bearing on its flanks the rocks around, the effects of that upheaval must have cumulated here, especially if the Silurian belt to the south was upheaved in a contrary way—perhaps, as Dr. Holl suggests, by deeper seated granite—or, little affected itself, acted as a buttress against which the Devonian rocks were thrust; while the superior rigidity of the limestone over its associates would increase the lateral pressure from the north on the rocks of my third division, lying between. This of itself would account for much of the contortion and faulting that prevails.

SECONDARY ROCKS, &c.

But we do not stop here. There is the clearest evidence in the existence of outliers that the Triassic rocks once occupied a much larger area in Devon than they do now. There is one such outlier in Bigbury Bay, at Thurlstone. And here, at Cawsand, is a felspathic trap identical in character with the trappean rocks of the Trias, and manifestly intrusive, “breaking through the older red deposits.” The rock is porphyritic, the base “a somewhat earthy compound of felspar and quartz, containing crystals of mica and (more rarely) felspar.”* The intrusion of this rock must have been accompanied by an enormous amount of distortion and dislocation, and in its turn have aided the phenomena at Staddon.

It is evident that from time to time this locality came within the influence of volcanic centres of considerable activity. Nor is it at all improbable that the outlines of the Sound were originally sketched by these mighty forces, qualified in their action by the differing resistible powers of the rocks. The limestone was one of the most rigid; but its resistance after all was limited. If not bent, it would be broken; and fissures were opened therein that,

De la Beche “On the Formation of Rocks in the South-West and South of England,” p. 259.

in the course of untold ages, have been worn into the channels through which pass, or once did pass, the waters of the Tamar and the Plym. Had not these fractures been made, had the waters been set the task of forming their own courses from the beginning, the slates would have been an easier prey; and nature never wastes her strength. The gorge of the Plym at Prince Rock has a depth of eighty feet below high-water mark, before the rock is reached, which there is shale. With slate rocks around, would the limestone have been thus cut, if the passage had not first been opened?

From the era of the Trias onward there is a great gap in our geological history. There is little evidence of the extent to which construction was subsequently exercised over the area under review. Mighty works were doubtless done, of which we have scarcely a trace. Denudation has wiped away countless ages, and brought us face to face with these old Devonian times. We have now but the skeleton of the deposits of that far distant epoch. Of their Secondary and Tertiary successors we have no remains. There is no Lias, no Oolite; Chalk is very doubtful (flints occur on the beaches on the east of the Sound, and on the hill over Staddon, but are too slender a foundation whereon to build with certainty the superstructure of local Cretaceous deposits); no Eocene, no Miocene, no Pliocene.

QUATERNARY PERIOD.

This brings us to the confines of the Quaternary system, and to the Glacial era. There are in this locality no glacial deposits. I am not aware that there are any traces of glacial action, though certain alluvial deposits have been, as I hold, mistakenly termed drift. There is on the shore of Barnstaple Bay a granite boulder which can only have been deposited where it now lies by ice action. There are boulders of red sandstone at Waddeton Court, on the Dart, which Mr. Pengelly is inclined to believe were transported by ice in some form. There are trap boulders at Englebourne, Harberton, that in his opinion appear to bear the marks of ice transportation. The "Head" on Bovey Heathfield has glacial characteristics.* Mr. C. W. Peach observed what he believed to be traces of glaciation on rocks in the Dodman district. These are the nearest evidences of glacial action to our own locality.

* "Notes on Boulders," &c., W. Pengelly, F.R.S., "Devon Ass. Trans.," vol. vii. pp. 154-161.

The most characteristic of the Post Glacial phenomena of Devon are ossiferous caverns, raised beaches, submarine forests. Plymouth has examples of the first and second.

These submarine forests occur at various points of the coast, as near on the one hand as Blackpool, Dartmouth; on the other, as Pentewan, St. Austell. They consist of beds underlying the present beaches, and extending an unknown distance seaward, partially up valleys landward, and composed of vegetable detritus, mixed with branches and trunks of trees, and occasionally containing stumps *in situ*.

The ancient beaches, precisely similar in their general characteristics to the existing, occur at intervals along the coast at a height of some 30 feet above the present sea level. When they were washed by the waves, the land must have been 30 feet lower than now. When the forests flourished, it was at least 40 feet higher. All the indications prove that these changes of level were gradual and extensive.

Anterior to the beaches are the ossiferous caverns, or rather their contents. Mr. Pengelly argues, from the conditions of the famous Windmill Hill Cavern, Brixham, that its filling preceded the forest era by a period sufficiently long to allow of the excavation of valleys 100 feet in depth. This is quite confirmed by our own local phenomena. I hope to be able to prove that the bone caverns of Oreston received their contents ere the gorge of the Laira was excavated.*

The bone-bearing caverns of Devonshire are among the most interesting of its geological phenomena. The ossiferous caves of this locality are entitled to peculiar distinction. They were the first to direct attention to cavern researches in the county, and among the earliest investigated in England. The first of the series was discovered in 1816, while the famous cave in Kirkdale, to which Dr. Buckland directed so much attention, was not found until five years afterwards. I cannot deal adequately with this important branch of my subject in the space now at my disposal; but a full statement of all that has been written about the Oreston

* Mr. Spence Bate, F.R.S., in his presidential address to the Devonshire Association in 1863, directed attention to evidences of some of the valleys of the lower lands on the south and west of Dartmoor having been filled with *débris* of the Dartmoor rocks to a height of 100 or 150 feet, and then re-excavated.

caverns, compiled by Mr. W. Pengelly, will be found in the Transactions of the Devonshire Association.*

Our limestone rocks abound in caverns. The largest is one at Stonehouse, an entrance to which is indicated by an inscribed stone in the pavement at Emma Place. This cavern contains a large reservoir of water, and it has been utilized for the drainage of certain houses, with what result time will show.

The existence of bone caves in this locality was first ascertained in connection with the works for the construction of the Break-water. When these commenced, in 1812, Mr. Whidbey, the superintendent, was asked by Sir Joseph Banks to make careful examination of any caverns that might be met with, and preserve their fossil contents, if any. Accordingly, in 1816, a quantity of rhinoceros bones, found in a cavern at Oreston, were sent by Mr. Whidbey to Sir Joseph Banks, and formed the subject of a paper read to the Royal Society by Sir Everard Home in February, 1817. Four years later other bones were found in a cavern 120 yards distant from the first, and described in a letter from Mr. Whidbey read to the Royal Society in February, 1821. In the next year there were still larger finds; and then came a lull. For six and thirty years the bone caverns of Oreston were merely matters of history, until, in 1858, a new series, more important than their predecessors, were discovered.

The bones were found under varied conditions. Some were simply embedded in clay which had been washed into the caverns; some were enclosed in a mass of stalagmitic breccia, traceable in its origin to a similarly acting cause. But from first to last there does not seem to have been any adequate evidence that the caves had been inhabited by the animals whose remains were found therein; in other words, that they were dens. Herein they differ from Kent's Cavern, but agree with the Brixham and one of the Yealmpton Caves. Yealm Bridge Cave was a hyæna den.

The earlier discoveries at Oreston were shrouded in a great deal of needless mystery. Mr. Whidbey held that the caverns were entirely enclosed in the solid limestone, and that there were no traces of communication with the surface in any direction. Dr. Buckland, who paid the caverns a visit in 1822, in conjunction with Mr. Warburton, and made a careful examination of all the conditions, held that there had been openings to the surface, but

* Vol. v. part i. p. 249, *et seq.*

that these had become closed since the entombment of the remains; and finding a quantity of detrital matter in the caves—clay, sand, limestone, gravel—concluded that the bones had been washed down therewith, and “lodged wherever there was a ledge or cavity, sufficiently capacious to receive them, or a straight sufficiently narrow to be completely obstructed by them; they were entirely without order and not in entire skeletons, occasionally fractured but not rolled, apparently drifted but to a short distance from the spot on which the animals died.” Buckland’s final hypothesis was that the animals had fallen during the antediluvian period into open fissures, and there perishing had remained undisturbed until the waters of the deluge drifted their remains to the position in which they were found. With his first suggestion I generally agree; from the latter I dissent. Geologists of the present day do not call a special deluge to their aid. It was far otherwise however once; since a little after Buckland writes, we find Mr. Joseph Cottle declaring, “No one phenomenon presents a fuller attestation of that overwhelming catastrophe [the Deluge] than the innumerable animal remains discovered in the Oreston Caves.”

We owe to Mr. Pengelly the most exact account of the recent cave phenomena which we possess. Visiting Oreston in 1859, in consequence of the renewed discoveries of the previous year, he ascertained that the new cave was in the same line as the old ones, which had been long entirely removed, “as if the various caverns had been so many enlarged portions of one and the same original line of fracture.” Moreover he found that such portion of the roof of the cavern as remained was a “mass of limestone breccia made up of large angular fragments cemented with carbonate of lime, and easily enough mistaken without careful inspection for ordinary limestone, somewhat rich in coarse veins.” This was what some of the older investigators had taken for an unbroken stratum of solid rock. Having thus established the original open character of the fissure, Mr. Pengelly declined to say “whether animals fell or were dragged in, or whether the bones found there were wholly or partially the remains of dead animals washed in. . . . Some of the bones appear to have been rolled as if they had been washed in, whilst if as Sir Henry De la Beche supposed the loam or clay is really impregnated with animal matter, it seems reasonable to infer that at least in some cases,

something more than mere portions of the osseous system was introduced." Fully agreeing with this view, I hope to be able to carry the matter one step further.

There is another hypothesis concerning the channels by which the remains were introduced, to which perhaps I ought to refer. It is that of Mr. H. C. Hodge, who holds that the caverns were really enclosed by solid stone, and suggests that the original openings are to be sought between the limestone beds at points where they are separated by seams of purple calcareous slate. I do not know a single instance of the occurrence of this slate which I should not pronounce contemporaneous with the limestone itself.

The animals whose remains have been clearly identified as occurring in the Oreston Caverns are—*Ursus priscus*, grizzly bear; *Ursus spelæus*, great cave bear; *Felis spelæa*, cave lion; *Hyæna spelæa*, cave hyena; *Canis lupus*, wolf; *Vulpes vulgaris*, common fox; *Equus fossilis*, fossil horse; *Equus plicidens*, ditto, with plicated tooth; *Asinus fossilis*, fossil ass or zebra; *Bison minor*, lesser bison; *Bos longifrons*, long-fronted ox. These were all identified by Professor Owen, who likewise assigned the rhinoceros remains to *Rhinoceros tichorinus*. Mr. Busk holds that they belong to *Rhinoceros leptorhinus*, which has never been found in cave deposits elsewhere, and is always of much rarer occurrence than its congener.

Mr. J. C. Bellamy states that bones of the mammoth and hippopotamus in his possession were found at Oreston; but he expressly mentions that he did not examine the caverns himself. The Rev. R. Hennah, who did, distinctly avers that in the caverns to which Mr. Bellamy refers no remains of the larger animals were discovered. I do not think therefore that either belong to the Oreston fauna, though Dr. E. Moore states that bones of the mammoth, rhinoceros, and bear were found in fissures on the Hoe; and the bones of the mammoth certainly did occur at Yealm Bridge.

Dr. Buckland concurred with Messrs. Clift and Cottle in believing that the weasel was included in the Oreston fauna. Professor Owen holds that the evidence is insufficient. Mr. Cottle mentions bones of the boar, the hare, and the water-rat as in his collection. Mr. Pengelly has identified the hog; but of the hare and the water-rat we hear no more. Mr. Bellamy mentions (second-hand) the occurrence of ovine bones. Mr. Hodge enumerates the deer,

the camel, the giraffe, and a small rodent of the size of a mouse as contributing to the contents of this ancient charnel. But in this, so far as I am aware, he stands alone.

The fauna of Oreston differs materially from that of Kent's Hole. It does not supply the great sabre-toothed tiger, *Machairodus latidens*, nor the Irish elk. On the other hand, Kent's Hole has neither *Equus plicidens*, *Asinus fossilis*, nor the lesser bison. And there are several lesser variations.

I pass away from the caverns for a while. We have in this locality an interesting series of alluvial deposits of varying age and character. The oldest are those beds of earth, intermixed with fragments of slate lying for the most part horizontally, which occur high up on the slopes of some of our valleys, and are of kindred origin to the ordinary river gravels. The newest occupy the creeks and higher portions of our estuaries, as at Lipson and Chelson Meadow, or at Puslinch on the Yealm, where a boring has been made of over forty feet without finding bottom.

The most interesting series are those which have from time to time been discovered on the Hoe. The highest point of the Hoe, which has a plateau of some width, is 110 feet above mean tide level, and the average height of the plateau is about 100. Midway on the Hoe extensive excavations revealed the existence of the deposits which I desire to describe.

Below the ordinary turfy soil there is a bed of earth more or less clayey in character, through which are scattered numerous pebbles. This varies in depth up to four or five feet, and contains patches of white and red clay appearing to graduate, partially at least, into the less distinctively clayey soil by which they are surrounded. With the clay are small veins of sand tending downwards to larger arenaceous deposits, which have not been bottomed.

The matrix of the pebbles differs in no respect from the ordinary alluvium of an ordinary river valley; unless in the occurrence of the patches of clay.

The pebbles scattered through it range from a very small size up to boulders a dozen pounds or more in weight. They are chiefly quartzose, some apparently a mixture of quartz and schorl, others granitoid in character, though rather resembling an elvan than a true granite; with a few of a dark hard slate. There are likewise fragments of limestone more or less waterworn; but the pebbles are unquestionably travelled.

The clay occurs in patches rather than beds, occasionally lenticular. The white clay in exterior character exactly resembles the ordinary clays of the Bovey Heathfield, and at once suggests a similar origin in the decomposed felspar of the Dartmoor granite. This clay contains very few pebbles. The red clay, as a rule, is not so free from them. It may have been derived from the decomposition of a granite with a reddish felspar; but the probability is that it owes its colour to the direct action of iron. Fragments of iron ore have been found in association. The white and red clays occur in close juxtaposition on the same level. Probably therefore the origin of both is the same, and the difference in colour due to local causes of an accidental character.

The sand is the chief peculiarity of the series of deposits. It varies in colour from white, to drab, cream-colour, and red; is very fine and unmistakeably siliceous—precisely such a sand as would be produced by the degradation of a granitic or a quartzite rock—such a rock, in short, as that from which the quartz pebbles already spoken of came. In mass it occupies a position distinctly subordinate to the clays, and evidently fills a large fissure in the rock, as yet of unknown depth.

These deposits are by no means isolated phenomena in connection with the Hoe. Sand was found in digging the foundations of Elliot Terrace adjoining; but that was largely mixed with pebbles. At the south-eastern corner of the Hoe, near the little cavern which is used as a tool house, the fissures in the rock contain pebbles precisely similar in character to those above. In such fissures we have the authority of Dr. Moore for saying that bones were found representing with tolerable closeness the Oreston fauna, including remains of the elephant, rhinoceros, and bear. Then again in 1808, a deposit of sand was found on the Western Hoe, fifty feet above high water mark, which contained the jaw of an animal with teeth two inches long, and a large vertebra $9\frac{1}{4}$ inches by $4\frac{1}{2}$. Nor are such deposits confined to the Hoe. They occur elsewhere on the shores of the Sound. We are indebted to Mr. Spence Bate for the account of certain beds of freshwater sand at Bovisand, unquestionably of kindred and probably of contemporaneous origin. And at Deadman's Bay may be seen the remains of a large "pocket" in the limestone—one side having been worked away, which was at least sixty feet in depth, and probably much more, and which was filled with clay and pebbles precisely similar to the

white clay and pebbles of the Hoe. We have the right to infer that wherever the conditions were favourable, the whole range of the limestone within the area of the Sound, and the streams flowing thereinto, received these deposits.*

I hold it to be capable of demonstration that the level wall-like character of our limestone—and this is no mere local phenomena, but may be observed in Torbay—is due to the action of water; that our limestone ridge is, in short, a platform of denudation, formed by a great river which probably followed in the main the course of the present Tamar, though it is quite possible that ice may have aided in producing this result. The range of limestone must have been exposed to the denuding action for a period of great duration, ere the platform could have been levelled as we now find it. While this process was onward, either no deposits were thrown down, or they were only harboured in sheltered spots. At length there commenced a period of upheaval—slow and long continued; and then the formation of new deposits set in. I am inclined to think that the deposition did not commence until the crest of the Hoe had been raised nearly to the level of the waters. Such fine sand could not have been deposited by either a rapid or a deep stream, at any rate at the actual site of deposition; and so with the clay. We see deposits of precisely analogous character formed in the present day by the streams which flow from china clay works. In the ordinary alluvium, and the pebbles intermixed, we have evidently the work of a still later period, when the Hoe had begun to peer above the waters, and was only liable to occasional overflow, the river meanwhile busily eroding the present channels by which it passes the rocky barrier, probably in the track of pre-existing fractures and fissures.†

And now, to return to the bone caverns. Their contents must have been carried into them by waters which flowed at a much higher level than those of the Tamar and the Plym, or by waters which flowed when the land was at a much lower level. Here, then, is my hypothesis. The similarity in character and method of occurrence of the two classes of deposits, lead me to hold that the caverns are in the main contemporaneous with the surface

* This view of mine has been confirmed, since the lecture was delivered, by my attention being called to similar phenomena at Billacombe. One of the Yealm Bridge caves was also filled in this way.

† "Trans. Devon Ass.," vol. i.

formations which I have described, and date back to a time when the limestone rocks which enclose the fissures were but slightly raised above the waters, and when therefore nothing was easier than the introduction into the caverns of bodies of animals swept down the stream, probably in time of flood; just as they are commonly swept down the rivers of tropical countries in the present day. This view has the double advantage of reconciling difficulties, and of agreeing with the generally-observed facts.

Finally, as to the raised beaches. Mr. Bellamy, in his "Natural History," states that the height of the ancient beach on the Hoe was generally about thirty feet above high-water mark; and describes a patch as it then existed (1839), twenty feet in depth, and fifty feet above high water. It rested on a shelf of smoothened rock, which sloped gently seawards, and consisted of regularly "superposed or stratified" layers, varying from extremely fine sand to moderately-sized pebbles. As traces of pholades were discovered in the rock on which these deposits rested, there can, I think, be no doubt that they were what they were taken to be—a raised beach.

I may add that pholas borings are said to occur in the limestone of Hooe, nearly 100 feet above the present tide level; but that doubt has been cast upon their origin.

This brings our narrative of the geological history of Plymouth down to (geologically) recent times; and here, then, I close the record.

SOME REMARKS ON RECENT SPECULATIONS ON THE ORIGIN AND SPECIFIC CHARACTER OF MAN.

ABSTRACT OF REV. J. ERSKINE RISK'S PAPER.

(Read December 9th, 1875.)

DARWIN'S theory of the origin of man stated. Arguments in support of his conclusion that "man is descended from a hairy quadruped, furnished with a tail and pointed ears, probably arboreal in its habits, and an inhabitant of the old world." Argument

from embryology; from homologies, or similarity of structure; from retention of rudimentary organs, and from reversions to rudimentary organs. Review of Wallace's reasons of dissent from the opinion that the theory of evolution applies to man. 1. Presence in man of characters originally injurious. 2. Original size of the brain. Testimonies of Professor Rolleston, Dr. Beddoe, and Paul Broca. 3. Comparative size of human and other animal brains. 4. Absence of any natural covering on parts of man's body requiring protection of some kind. 5. "Specialization of the hands and feet of man." 6. Capabilities of voice in man, and nice discrimination of musical sounds, with the power to produce them. 7. Arguments against production of man's moral and mental faculties by means of natural selection; viz., existence of conceptions in man which cannot be so accounted for. Inevitable conclusion from the possession by man of faculties manifestly belonging to his spiritual being only, and its progressive perfection, and having no bearing on his material welfare. Hence follows a further conclusion as to the manner of operation in nature of the higher intelligence. Man's place in nature shown not to be affected by theories as to manner of his origin. In any justly supposable case, he would be "still a new and distinct order of being." Question, Whether the theoretical primitive man can be regarded as true man or not; *i.e.* whether we are to regard him as an anthropoid ape or a pithecoïd human being, and the bearing of this question on that of the unity of mankind? The theory of natural selection not modern, but an ancient theory, being in fact found to be stated, almost in Darwinian language, in the *Physics* of Aristotle. Is the condition of primitive man as a savage hunter consistent with his supposed descent from a fruit-devouring ape? The paper closed with two fancy pictures portraying the contrasted results of the creationist and evolutionist theories. Which of these beings are we to choose as our ancestor—man created with all manlike faculties after the glacial era had passed away, or the assumed common progenitor of the ape and man of Darwin struggling on miserably through the glacial epoch?

"Under which king, Bezonian, speak or die?" Caliban or Prospero?

FURTHER FACTS AND ARGUMENTS ON THE ORIGIN
OF MAN, WITH SPECIAL REFERENCE TO THE
MECHANICAL THEORY OF EVOLUTION.

ABSTRACT OF REV. J. ERSKINE RISK'S PAPER.

(Read February 3rd, 1876.)

THE former lecture on the origin of man dealing only with the natural history of the subject, this will distinguish between the various theories of evolution. The mechanical or nontheistic theory distinguished from the atheistic, or prevalent German theory. Herbert Spencer's illustration of his theory analysed and tested. The precise stand-point of Spencer, and relation of his theory to that of Darwin. Is there really a strict community of descent? Review of arguments to this effect, and what they really prove; viz., the common general type of all the vertebrata, and the common animal nature of man and the other animals. The mechanical evolutionist theory of the origin of life, mind, and the moral faculties. Its inadequacy. Size of brain and mental capacity, how related. Limits of natural selection in man. The difference in mental and moral faculties of man and brute is one of kind, and not merely of degree. The stability of species is relative rather than absolute, if we take into account the immense periods of duration of the existence of the earth. Summary of conclusions from the facts and arguments adduced in the two lectures of the session on this subject. Confirmation of these conclusions from the recent address (1875) of Professor Cleland, of Glasgow, at the British Association. "Even . . . in the varieties of the human race," says Professor Cleland, "there seems to be some evidence that the progress of evolution is to be traced *from* man, not to other animal forms yet to appear, but through his psychical nature, into the land of the unseen."

THE ORIGIN OF THE IDEA OF THE HOMERIC OLYMPUS.

ABSTRACT OF REV. S. BEAL'S PAPER.

(Read January 13th, 1876.)

THE object of this lecture was to show that the Indian fable of Mount Meru and its occupants was probably the foundation of the Greek or Homeric myth of Olympus and its various gods. The very word Olympus was traced to the old term *Avalambhin*—"hanging down like the skies;" and the close relationship between Vaisrâvana and Hephæstus was a further argument in favour of the common origin of both mythologies.

SOME FACTS CONCERNING DIET.

ABSTRACT OF DR. W. H. PEARSE'S PAPER.

(Read 20th January, 1876.)

Food treated theoretically and practically; the paper aimed at a natural-historic view of food, embracing the chemical, physical, physiological, and historic. Comparative natural history, comparative microscopic anatomy, and the highest chemistry, all, he contended, bore on food. Firstly, the lecture treated of the vegetable-organic and its relation to food. The vegetable kingdom converted the inorganic into the organic for animal wants: the three conditions were parts of a series. "Evolution" meant the order of the series, of the successive forms of living beings, all in harmony with the continuous, and so far uniform laws or order of nature. Secondly, the lecture treated of the animal kingdom.

The laws or phenomena of the variation of the forms of animals, of reversion, and of hereditariness, were traced: a parallel order of law was shown to exist in the variation of textures, tissues, and so-far ultimate cell-elements of living beings, to the laws of the variation of animal forms themselves. Absolutely "specific" natures did not exist, but "gradation" of series. Time must be allowed. "Overlapping" of animal organs, "overlapping" of earlier types of tissue, and earlier cell-conditions in the at-present existing animals: relation of this to some diseases. The nature of the deviation of the forms and longevity of the cell-growths, which exist in consumption, cancer, &c., must be studied in a parallel method to that which the naturalist pursues in his study of the correlatable variation of animal forms. Thirdly, facts and laws relating to the chemistry of vegetables and animals were traced, together with the place of the inorganic elements of the simpler organic, and of the compound-organic bodies, of the animal kingdom; the vast atomic weight of the latter. The plasma, cells, and tissues of the body, were synthetical; vital "selectiveness" of cells, and the so-far ultimate plasma, a "polarity." Chemical law, as our view enlarges, embraces in one series, the inorganic, the organic, and the vital. Fourthly, the lecture treated on the elements of food as affecting the forms and tissues, cells and plasma of animals; known phenomena and results led, by analogy and research, to more extended discovery: on primitive foods, as those of India; on "naseent," or other states of combination of the elements of food, as of mineral waters, cod-liver oil, &c.; the vast power which certain states of combination of the elements, have over the tissues of the body; on the mineral elements of food; their great place in the life and history and well-being of animals and man; on cravings for special foods. The sea yields both mineral elements and combinations of food of the greatest power over man's most prevailing decay—scrofula and consumption. Hereditariness, in some instances, has been created by external physical conditions; but it has, to some degree, been arrested; hence the eager search for those elements in food which should justly co-ordinate and sustain the tissues and body from deviations into disease.

PAUPERISM.

ABSTRACT OF REV. W. SHARMAN'S PAPER.

(Read January 27th, 1876.)

THE lecturer said he regarded pauperism as "our social sin grown manifest," but was chiefly concerned at that time with the inquiry, why our attempts to relieve it were so far failures that our private gifts were sources of demoralization, and our national alms were so hated that the criminal poor preferred the prison, and the proudest death. After a reference to the confessed failure of private charity, he called attention to the objection of the poor themselves to accept national relief—a reluctance entertained by them in proportion to the virtue of their character. So great was the detestation of the "house," that the Yorkshire poor called it "the Bastile;" and yearly three hundred great-hearted English souls chose death rather than its dishonour. He regarded the proposal to abolish out-door relief with the greatest aversion. He thought that relief a necessary and merciful part of our system, and he would use it as a means of classification, giving it often to a more liberal extent than was at present done. The "house test" was often cruel, and proved a poor economy. Separated families and broken pride were too heavy prices to pay for diminished rates, even if they could be so purchased. The immediate and imperative duty of the time appeared to be the organization of private benevolence, and the association of volunteer workers with the administrators of public relief. The experiment, begun in Elberfeld in 1853, showed what could be done in that direction. In 1853 the population numbered 50,364, and the paupers relieved were 4,224; in 1873 the population had increased to 78,000, and the number of paupers had fallen to 980. The plan by which this result had been effected was the division of the town into 252 sections, a visitor being placed over each section, and an overseer over each fourteen sections. All applications for relief were made in the first instance to the visitor, who was empowered to give relief at

once in cases of urgency. There was no careless delay of Bumbledom possible, nor any chance of a coroner's inquest succeeding an appeal for help. No visitor had more than four cases in charge, and fraud was almost impossible. The drunken and dissolute were subject to severe police regulations. Adverse critics of the plan had contended that its success was illusory; that it only diminished pauperism in Elberfeld by worrying vagabonds out of the place. It seemed to him a sufficient answer to reply that it was a good thing that vagabonds, clearly and unmistakably such, should be worried; good for the vagabond himself, and better for the innocently destitute; for nothing made the bread of charity so bitter in the mouths of the English poor as the fact that they received it in disgraceful companionship with rogues. He did not expect that the plan would effect a reduction equal to that reported from Elberfeld in English pauperism; but it would do great good by stopping the unwitting manufacture of paupers resulting from private almsgiving, and by organizing the irregular forces of the charitable. To be sure not only that imposition was no longer possible, but also that desert could not die in silent, unnoted woe, would make life brighter, and the morning paper less like a herald of coming doom. There was a call for the love of man to a field of effort more needing their activity than the shores of Lake Nyanza. But when charity had been organized, and its army drilled, much would remain to be done. It was a national duty to have the State so organized that no honest man born into it could want food who was able to work, and that each honest man unable to work should receive not degrading alms, but a pension as honourable as any paid to the soldier or dockyard worker. His object was national insurance against want. The way to the realization of that Utopia had been pointed out by existing friendly societies. Those societies already counted 4,000,000 of members, owned £11,000,000, and saved £2,000,000 yearly to the rate-payers. There was shown a way to make firm footing out of the quaking bog of pauperism. Let the State exhibit as much concern for honest men as it did for rogues; let it give as much care to make honest industry secure as it gave to the protection of vagabondism, and there would come a content to the homes of England long strange to them. A national benefit society, possessing all the advantages of smaller societies, and exempt from their risks, would be found practicable whenever England should be as deter-

mined to get out of the slough of pauperism as she was twenty years ago to get out of the mud of the Crimea. A careful exposition of this idea would be found in the "Westminster Review," January, 1875. Its advantages were—1. It gave security to thrift, and conferred upon it the honourable regard of the State. 2. By securing economy in administration, applicants could be admitted to membership without medical examination, and persons of weak constitution would obtain that protection against sickness now refused to them. This could be done without loss, because of the large average such a society would secure. He did not believe that working men would desire to gain extra profit by excluding such persons. The artisans of England had never allowed themselves to be corrupted by individualistic theories of personal profit, but had always striven honestly, if unintelligently, to unite for the common good. They would hail with satisfaction an opportunity of bearing in honourably helpful ways a share of the burdens that cruelly bend weaker backs. 3. The scheme would enable the nation to weed out its vagabonds from the virtuous poor, and to deal firmly with them. 4. The charity of the nation would be organized, and its gifts righteously, wisely, and kindly bestowed. The charity-workers of England were heart-sick and despondent because of their felt failure, and were ready to obey the State whenever it should be seen that they really had a State conscious that its mission was to direct its subjects in labour for the common weal.

"QUALITY (TIMBRE) OF MUSICAL SOUNDS."

ABSTRACT OF MR. B. SMITH'S PAPER.

(Read February 10th, 1876.)

EVERYONE is familiar with the fact, that the same note may be sounded upon a variety of musical instruments, such as a violin, flute, and pianoforte; and although all may be of exactly the same pitch and degree of loudness, and the hearer, out of sight, has no difficulty in distinctly associating each tone with the instrument which produced it.

[This point was illustrated by experiments.]

Now, sound is the name given to the sensation experienced when the auditory nerves which connect the brain with the apparatus of the ear are affected by a peculiar motion or tremor, generally communicated to them by rapid changes in the atmospheric pressure upon the tympanic membrane, or drum of the ear.

The ordinary case is this: Some body more or less removed from the hearer is thrown into rapid motion; the air which envelopes both the ear and the moving body communicates the motion of the latter to the former, and produces upon it the sensation of *sound*.

Thus, then, it follows that the sole difference between tones of various kinds must consist in the different mechanical effect which each has in producing alterations in the pressure upon the tympanum, and that inquiries into the causes of tone must ultimately resolve themselves into examinations of differing forms of motion.

It has long been known that in order that a sound may be *musical* the motion producing it must be of a vibratory character, and that the vibrations be isochronous; also, that the length of the period, *i.e.* the rapidity of vibration, is the condition which determines the pitch, and the amplitude or distance of vibration the loudness of the note produced. What were the physical conditions answering to differences of *tone* or “*timbre*” was a matter of conjecture by the earlier acousticians, and it is only within the last few years that the researches of Professor Helmholtz, G. S. Ohm, and others, have succeeded in partially elucidating this rather obscure point, and in showing that “*timbre*” mostly depends upon the *form of vibration* or the proportions obtaining between the velocities of the moving body in going through its phases.

The study of this subject is much facilitated by diagrams, which, by means of rectangular co-ordinates, the one of *time* and the other of *displacement*, show a curve which answers to the peculiar form of motion assumed by the moving body.

Thus, if a pendulum be allowed to swing across a sheet of paper, carrying a pencil to mark it, a straight line only will result while the paper is still, representing the displacement of the pendulum. The pendulum being still, the paper has a regular rectilinear motion, with a constant velocity, given to it at right angles to the former line, another straight line will be generated, successive points in which will represent successive *periods of time*. If the two motions be compounded, a *curved line* will result, which is a diagrammatic representation of the *form of vibration* of the moving

body. This, in the case of the pendulum, is known as the curve of sines, because the magnitude of the ordinates of displacement varies as the sine of a constantly increasing angle.

In the same manner the variations in the pressure upon the tympanum may be exhibited by a curve, whose abscissa measures *time*, and positive and negative ordinates excess or defect of pressure above the average; and it may be shown, that (without sensible error) the *curve of displacement* of a vibrating body may be taken to represent also the *curve of pressure* resulting from its effect upon the atmosphere.

It is found that rapid motions similar to those of the pendulum produce the simplest and purest tone, approximated to by that of the tuning-fork, and that the more peculiar and characteristic tones result from periodic motions of forms differing from this, but which may be considered as compounded of a number of such simple motions of different periods *superposed* on one another; and it is shown by "Fourier's Theorem" that any arbitrary periodic curve may be analysed into a certain set of pendular curves, but into *one possible set only*. This is the explanation of the effect of the "harmonics" of strings, &c. There is strong evidence for believing that the human ear (by means of the organism discovered by Corti) is enabled by sympathetic resonance to analyse a single set of vibratory motions of peculiar form into its elementary pendular motions, which affords the only known explanation of the very remarkable phenomenon, that we can hear two different sounds at the same time. The lecturer illustrated this point by an experiment in which the strings of a pianoforte were made to perform the analysis and synthesis of the peculiar tone of a reed organ pipe, and an analogy was drawn between these strings and Corti's organ.

A number of *tone curves* were exhibited and explained, especially that of the violin string, which was found to resemble that of the *displacement curve* of the ore stamps used at mines (or of the tilt hammer), in which the velocity in one direction is slow and regular, while in the other it is rapid and accelerating, the changes of direction being marked by acute angles.

Besides these differences in form of vibration, the lecturer expressed an opinion that other causes contributed to stamp upon a particular instrument or performer its peculiar "timbre." Among these are slight departures from exact isochronism, or the perfect equality of adjacent periods. Irregularity in the amplitudes, or if

some portions of the curve should be replaced by straight lines co-incident with the abscissa, answering to short intervals of silence, as in the case of the ordinary dog-whistle with a pea in it. Rapid changes of phase, as noticed by Helmholtz in his observations on the violin, the curve continually breaking off and recommencing in a different phase. The predominance, or the contrary of what may be termed the attendant noises, of every source of musical sound.

The lecturer had intended to enforce the esthetical importance of his subject by a few musical illustrations upon instruments presenting marked differences of "timbre," but it was ruled by one of the secretaries that the admission of music would be derogatory to an institution whose avowed object is the cultivation of "Science, Literature, and the *Fine Arts*."

THE MINERAL RESOURCES OF DEVON AND CORNWALL.

PART II.

ABSTRACT OF PAPER BY DR. R. OXLAND, F.E.S.

(Read 17th February, 1876.)

CLOSE consideration of the subject is expedient, because, from the recently depressed conditions of the market for copper, tin, and iron, the opinion has been spreading that the days of success for mining in Devon and Cornwall have been numbered, and that these industries must die out and disappear. Already very serious consequences have accrued, amongst which may be mentioned the abstraction of capital, and what is more important still, the removal of labour by emigration to other districts in Great Britain, but principally to the colonies and the United States.

In the following remarks, the possibility of obviating these difficulties has been the principal object of consideration.

The opening of a new railway, the South Western, which will shortly take place, will afford greatly increased facilities for the transport of supplies of materials, through districts hitherto unapproachable for mining purposes, and for the conveyance of ores to shipping ports. It will also bring these districts into easy access for capitalists disposed to engage in the development of mining

industries. The peninsular form of the two counties, presenting a very extensive coast line, provided with many harbours either already possessing great facilities of access or capable of being rendered so, at a moderate expenditure of capital, is very striking, and remarkably well adapted for the development of their mineral resources.

The most remarkable geological features of the two counties are observable in the prevalence of extensive granitic ranges of hills of moderate height, with their concomitant phenomena of metalliferous deposits.

These, studied in the light of the recent *Challenger* deep-sea investigations, tend to show that the whole district, comprehending the coralline limestones, the Devonian sandstones, and the metamorphic rocks, has been elevated from the ocean depths by the granitoid eruptive rocks, which have helped to bring to surface the metalliferous stores which constitute the main object of the wealth-seekers.

Of the origin of the limestone rocks we can have no doubt, for we have the remains of their coralline builders still with us ; and although they are now in open air, and not in ocean depth, we are as certain of their history as if their construction had proceeded immediately under our own cognizance.

The subjacent slate rocks, we now have reason to believe, were derived from palæozoic remains, although their life-origin is not so clearly written upon them ; but the question is suggested whether they may not have an intermediate, but now missing link, the chalk formation at present represented by the more recent coral limestone.

The positions of the soft slates, and of the hardened metamorphic rocks, as well as their composition and constitution, are in accordance with the exhibition of forces clearly indicated by the appearance of the granitoid and other eruptive rocks, and give at least very strong evidence in favour of the theory that great forces from below have thrust up the granitic ranges, and have opened such communications with metalliferous sources at great depths below the earth's surface as have rendered them available to human research.

The practical miner everywhere in the two counties recognizes the fact, that at the junction of the granite and the killas are the localities where lodes or metalliferous deposits are to be sought

for, with the greatest probability of success. The most recent mining operations everywhere tend to support the theory that the richest deposits of metalliferous minerals are to be found at the greatest depths.

At the celebrated Dolcoath Mine, in Cornwall, the deeper the working the richer the ore. The silver mines of Mexico, and the still more wonderfully rich silver with gold mines of Nevada, teach the same lesson. Confirmation of this theory comes in another form. The specific gravity of the earth in its entirety is about 6·5. A great portion of the surface of the earth is covered with water.

To the greatest depths that mining operations have yet reached, the average specific gravity of the products obtained will scarcely equal 2·5. The average of the whole of the earth's crust will probably be less than 1·5.

The constituents of the inner crust must be of much greater and of rapidly increasing specific gravity in order to make up the average of 6·5. No other substances than metalliferous minerals are known which possess such high gravities, and those too of the more valuable and precious metals; therefore the probabilities at least are greatly in favour of the expectation, that researches greatly extended in depth beyond those surface scratchings of the globe that have hitherto been undertaken, may lead to the most important developments.

The limits of this paper render it necessary to concentrate attention on the principal minerals obtained in Devon and Cornwall; viz., those of tin and copper. Tin was obtained by the Phœnicians from Cornwall long anterior to the Christian era; but I have not met with any statistical returns of earlier date than 1750, in which year the production of metallic tin in Cornwall amounted to 1,600 tons. In 1790 the returns had increased to 2,000 tons; but they fell off to 1,500 tons in 1800; 1,400 tons in 1810; increasing again to 1,700 tons in 1820; to 3,500 tons in 1830; 5,000 tons in 1840; 10,353 tons in 1850. Up to the present time the average may probably be taken at 10,000 tons. Over this period prices of metallic tin have varied, from as low as £60 per ton in 1843, to as high as £165 in 1872.

From a rough estimate that I have made, it is probable that the production of Cornwall, if taken at £50,000,000, will be considerably within the truth.

These may appear to be large figures, but the possibility of the correctness of them may be judged of, from the fact that I have been shown a piece of very poor ground, of little over two acres in extent, from beneath which sufficient ore had been raised to produce metallic tin, in blocks of the usual size—about 4 cwt.—so numerous that they would cover the whole of the surface, three in depth.

In copper, the production of Devon and Cornwall in 129 years, from 1726 to 1855, amounted to 7,884,305 tons of ore, equal to 630,744 tons of metal, value £50,964,388.

Up to the present date the totals are about 12,000,000 tons of ore, worth £64,000,000, making altogether, for tin and copper ores alone, about £114,000,000 ; a respectable sum for the two western counties.

These figures may appear to be large, but any doubt as to the probability of their correctness may be removed by the fact that one mine alone—Devon Great Consols—has produced more than $3\frac{1}{4}$ millions sterling in less than thirty years from an area of 140 acres.

How these results have been obtained, and what is done with the money produced, may be illustrated by a sketch of the history of Devon Great Consols Mine, near Tavistock.

The land belongs to the Duke of Bedford. The workings are extended over and under about 140 acres, but they do not exclusively occupy the surface, about one-half of which is still covered with plantations and cultivated soil. At the time of commencing mining operations, the whole of this area was of but very little value.

Up to 1872 more than 600,000 tons of ore had been raised, and sold for £3,250,000, of which sum nearly £250,000 was paid for lord's dues. For labour, £1,370,437 ; for timber, taxes, water, iron, steam and water engines, and cost of management, £368,115 ; and dividends to shareholders, £1,192,960.

These results were obtained by the organization of a company of adventurers, who held the mine in 1,024 shares. A call of twenty shillings per share was made, but there is now much doubt whether this sum was ever paid up. Work was commenced at an old shaft about fourteen fathoms in depth, which had been worked and abandoned many years before. The inducement to recommence operations was the observation of the remarkably characteristic gozzans that had been thrown out from the old

workings, and which were also found in considerable quantities in the neighbourhood scattered over the surface. Captain James Richards, who is still the chief captain, was superintending the operations. As soon as the shaft had been cleaned up, refitted, and sinking carried to seventeen fathoms in depth, the lode was cut in such a very rich deposit, that before the end of the first year dividends were declared from profits amounting to upwards of £73,000, equal to £71 per share; and before the end of the second year 17,000 tons of ore had been raised and sold for over £120,000.

Up to the present time the excavations underground amount to forty miles in linear extent. In the form of perpendicular shafts about two and a half miles, of winzes and rises six and a quarter miles, and drivages twenty-seven and a half miles.

For several years the ores were carried by horse-power to Morwellham, over between five and six miles of ordinary road; but since then, a good substantial railway has been erected, about four miles long, worked by locomotive and stationary engine.

There are now on the mine, eight large steam-engines, three locomotives, thirty-three water-wheels, a large foundry and fitting shop for building engines and machinery, saw-mills, changing and tool-houses and stores, extensive arsenic works for the extraction and refining of arsenic, large cooperage and carpenters' shops, and a school for the workmen's children, besides beautifully laid out precipitate works for obtaining from the drainage water the copper held in solution. This is done by causing the water to pass over old scrap iron, which is dissolved and carried off, copper being left in its place. When in full operation the working staff consisted of twenty captains, four hundred and fifty men and boys working underground as miners, and at surface two hundred and fifty-nine mechanics, such as engineers, fitters, blacksmiths, carpenters, masons, &c., besides one hundred and thirty-six men, one hundred and sixty-eight boys, and two hundred and seventeen girls on the dressing floors, making in all a little industrial army of about one thousand three hundred souls. The monthly consumption of materials amounted to—coals, 200 tons; timber, 160 loads; gunpowder, 2,000 lbs. The payment of rates and taxes in the parish of Tavistock amounted to £1,200 per annum. The number of persons immediately dependent upon this mine was probably not less than four thousand, including the families of the employes.

The fructifying influences of the lord's dues and of the dividends

may be met with, over many parts of the county, and especially may the handsome little country town of Tavistock be regarded as a lasting monument of the mining industry of the celebrated Devon Great Consols ; and its older inhabitants can tell interesting stories respecting old Wheal Friendship, Wheal Betsey, Ding Dong, Danescomb, Crebor, Virtuous Lady, W. Franco, Drake Walls, Gunnislake, Liscombe, George and Charlotte, and other notabilities, whose records made its reputation as a mining town in the Metropolis.

In Cornwall bright memories of the past are linked with the histories of the silver and lead mines of the Menhenniot district, Trelawny, and Mary Ann ; of the copper mines of the Caradon district, of the Fowey district, such as Great Fowey Consols and Crinnis, the united mines of St. Day, the Carn Brea series, including Dolcoath, Cook's Kitchen, East Pool, and others, producing copper, tin, silver, wolfram, cobalt, arsenic, zinc, &c. ; and then, further south and west, the Helston and St. Just districts, producing copper and tin from, amongst others, the old celebrities Levant, Botallack, Wheal Vor, &c.

Unfortunately at the present moment scarcely more than a dozen mines in the two counties are paying costs ; and consequently the oldest mine adventurers are so exceedingly dispirited that they profess the belief that there is no alternative but to abandon their undertakings, and give up further effort. There is therefore the most pressing necessity for entering on the enquiry as to the possibility of reviving our mining industries, and of securing such a development of our resources as shall far exceed the brightest dreams of the miners and their well-wishers.

A close circumstantial review of the origin and development of some of the most remarkable mining enterprises shows the necessity for the application of the highest class of administrative and executive ability, in order to the application of the most powerful resources of mining and engineering principles. In view of the manner in which operations have actually been carried on, it is only wonderful to find how large a measure of success has been obtained, proving rather how rich the deposits must have been than the efficiency of the power applied for rendering them available.

Refraining from reflecting on the history of the past further than is absolutely necessary, let us consider what may be done in the future.

Hitherto the prime object of mine adventurers has been, by linking their fortunes to that of a mining enterprise, to increase their wealth as rapidly as possible; therefore, if a mine cut rich, to devise the most complete method of making it into pocketable form as quickly as possible, utterly regardless of the future. Any apparent exceptions from this rule may be easily accounted for, on the same principle, the secret history of directorates being known.

Numerous mines now abandoned should have been still at work, had a different policy been pursued, with manifest advantage to the commonwealth.

Of course, there are absolute exceptions to the ordinary state of affairs, but only sufficient to be a proof of the rule.

The problem to be solved is, then, how best to reinstate the character of the two counties for their mining resources. It is a great one, and therefore worthy a bold adventure. The history of ocean telegraphy shows that bolder ones have been met, and successfully worked out. Two millions sterling were lately raised with ease, and invested in a worthless foreign mine; but suppose a capital of a million raised here, and spent for determining the question whether some one of the best of the present languishing deep mines may not be brought into such a working condition as to prove that their riches have not been exhausted, but abandoned for want of means to prosecute their search.

My scheme would be this: To select a piece of mining ground of well-established character, either new or that has already been worked; to secure a capital of a million, which, under the very best possible management, should be devoted to the sinking of a large shaft to a great depth, say 1,000 fathoms, to serve as a main entrance, from which levels should be driven off, for testing the lodes, at certain distances from each other. Supposing a rich deposit reached, I would not allow more than a maximum dividend of, say, 10 per cent. on the paid up capital to be paid out of profits until a reserve fund in hand were obtained equal to the amount of the capital fixed on at starting, so that there should never be any difficulty respecting the means of prosecuting explorations contemporaneously with the extraction of the saleable ores.

The management should be exclusively in the hands of first-class men, distinguished for ability in the organization of financial, engineering, and mining operations, the executive to consist not only of first-class miners, but also of skilled metallurgical agents.

The proposition to work at greatly increased depths has been steadily opposed by most of the old miners; but those who are acquainted with the incessant active opposition or contemptuous neglect of the aids offered for facilitating work, experienced in most of the Cornish mines, can see no sufficient reason for not accomplishing the scheme with the aid of the younger hands, who have gone forth and learnt new lessons in the mountains of California, Nevada, and Australia, and have come back ready and willing to apply their experience for the benefit of their old home.

Cornish engineers are to be found ready, if allowed, to revive the celebrity of the achievements of the Cornish pumping engine, and not only so, but to apply to their perfecting, the improvements made in the construction of locomotive, marine and other engines. By the general introduction of the steel wire rope and improved hauling engines, of boring machines, of improved blasting agents, of Blake's crusher, of one of the many forms of stamping machines, instead of the old Cornish stamp, by the use of good coal, by adopting the best known methods of preparing ores for the market, there are already sufficiently obvious methods of converting many unprofitable mines into dividend-paying companies. There is yet another source of improvement that has already been adopted with very great advantages by a few mines that requires notice.

It has been the common practice to work a mine for one metal only, and so if a mine had been denominated a copper mine, and laid out accordingly, the presence of other metals would most commonly be ignored. Already, in looking over the reports of some few mines, we may find returns given of the value of ores sold, for copper, tin, arsenic, wolfram, tungstate of soda, cobalt, nickel, bismuth, &c.; but what has already been done is but a very small earnest of the improvements that yet remain to be worked out. In illustration of this, let us take some of the ores on the lecture table. The sample before us contains, we will suppose, in round numbers :

Copper	.	.	.	.	.	.	.	.	3
Tin	.	.	.	.	.	.	.	.	2
Arsenic	.	.	.	.	.	.	.	.	20
Sulphur	.	.	.	.	.	.	.	.	30
Iron	.	.	.	.	.	.	.	.	30
Wolfram	.	.	.	.	.	.	.	.	5
Silica and Alumina	.	.	.	.	.	.	.	.	10

If we attempt to sell this as a copper ore, the quantity of copper is so small that the price obtainable will not pay the cost of sending to market.

This will clearly appear, when we consider that in order to get three tons of copper to market it will be necessary to send 100 tons of ore to the smelter, who will have to deduct from the value of the three tons the cost of carrying the ninety-seven tons of waste, as well as the expenses incurred in separating all this waste material; but if at the mine the proper course of dressing operations be adopted, the following results are attainable by the treatment of 100 tons of such ore :

	£
Copper, 3 tons of, 60 % @ 16s.	144
20 tons Arsenic=26·4 tons Arsenious Acid @ £10	264
30 tons Sulphur=Sulphuric Acid 107 tons @ £3 10s.	374
30 tons Iron	
Wolfram, 5 tons @ £12	60
	<hr/>
	£842

Making a very liberal allowance for cost and waste in the operation, we may charge £500; and have the handsome sum of £368 as the amount of profit out of which another liberal allowance may be made for payment of cost of extraction and bringing to the surface; but it must not be forgotten that the final nett balance is but a small proportion of the value to the locality, inasmuch as the other expenses consist principally of labour charges, beneficially affecting the population of the district.

No instance can yet be adduced of this type of working having been carried out in its entirety; but at Devon Great Consols it has been done to a considerable extent, and proportionate results have accrued.

With abundant supplies of water, cheap fuel and timber, iron and building materials; with good and cheap labour, if well paid for; with splendid resources of minerals, good roads and easy carriage to and by water, there are opportunities in Devon and Cornwall for the profitable investment of capital for the development of their metalliferous resources which have as yet hardly been dreamt of.

THE DEFENCE OF POETRY—SIDNEY AND SHELLEY.

ABSTRACT OF MR. J. SHELLEY'S PAPER.

(Read February 24th, 1876.)

THE lecturer analysed and discussed the two essays—Sir Philip Sidney's "Apology for Poetry" (written probably in reply to Gosson's "School of Abuse") and Shelley's "Defence of Poetry." He noticed that Sidney determines that verse is not essential to poetry—"It is not riming and versing that maketh a poet"—and that Shelley so far agrees with him that he considers it "by no means essential that a poet should accommodate his language to [the traditional form of metre], so that the harmony which is its spirit be preserved."

But while it is undoubtedly the tendency of the most sympathetic critics to widen the definition of poetry, so as to include works of imagination which are not written according to any strict laws of metre, it is certainly more convenient to restrict the application of the word to such compositions as are governed by some recognized metrical rules. The rhythm of poetical prose, however marked, is subject to no fixed rules. It receives its laws from within, not from without; the passion of the writer controls its expression, and is not controlled by it. The definition of poetry, as subject to fixed external laws of metre, establishes a real and essential distinction between poetry and prose.

The two essays have one object in common; viz., to prove that poetry is an important and effectual means for producing virtuous actions. Sidney attempts to prove this by showing that poetry is, as he calls it, the true architectonic science; not only imparting knowledge, but moving to action. The only sciences that could contest this position with it are history and philosophy. History fails because it is tied to what is; while philosophy fails, on the other hand, because "it standeth upon the abstract and general;" but poetry unites the advantages of both. Sidney fails, however, to show us why it is that poetry exerts such peculiar

power over the mind. Shelley goes nearer to the root of the matter in his doctrine that the great secret of morals is love, and that love is, or at any rate springs from, the exercise of the imagination. If this be granted, it is clear that to strengthen and stimulate the imagination is at all events to increase the possibility of goodness. The only point in which Shelley's argument appears to fail, or in which rather it needs to be completed, is that supposing the imagination to be, as he says, the great instrument of moral good, it is also the great instrument of moral evil, and everything must therefore depend upon the direction given to it. But what are we to say then of poetry by which the imagination is stimulated to mischievous exercise? Simply that it is immoral poetry, or that it is not poetry at all? Mr. Ruskin seems to imply the latter. He defines poetry as "the suggestion by the imagination of noble grounds for the noble emotions." Is it not, however, the art itself, or the operation of the art rather than its results, that must furnish the true basis of a definition? Shelley defines it in one place as the "communicating and receiving intense and impassioned conceptions respecting man and nature." Here all consideration of the moral purpose and effect of poetry is set aside, not as unimportant, but as not essential. I do not think, however, that Shelley's definition is complete. It would apply not only to impassioned prose, but to painting and sculpture, and perhaps to others of the arts. I would propose, therefore, to limit the definition, and would describe poetical genius as the power of receiving and communicating, in language measured by fixed or ascertainable rules, intense and impassioned conceptions concerning man and nature.

COLOUR.

ABSTRACT OF MR. C. OXLAND'S PAPER.

(Read March 2nd, 1876.)

REASONS were given for the more general and thorough study of colour as a science. Colours were described as purely sensations produced by the action of light on the nervous tissue of the retina, and not an inherent quality of the surface of objects.

The tendency to suppose the colours of different lights an indication of some distinctive quality residing in the light also referred to as erroneous. All the colours of homogeneous lights may be more or less compound sensations, and that mixtures of different kinds of light may have the same colours. Colours of certain kinds of homogeneous light may be imitated by mixtures of other kinds, and the very same kinds of light may have different colours, not only in different eyes, but also under different circumstances, or by lapse of time in the same eye. Field's plan of using a combination of hollow glass wedges, filled with coloured solutions, as a means of measuring the intensity of a colour according to the thickness of the solutions, which give a colour to match it, was shown to be fallacious. To thicken a solution or transparent pigment alters the hue as well as darkens its colour. Colouring matters act by destroying some kinds of light faster than others, so that light that escapes from thick washes of a transparent pigment cannot be the same in quantity or quality. White, as differing from other colours, described as containing all the simple colour sensations in equal strength. Maxwell's, J. J. Muller's, and Helmholtz's experiments were described as leading to the same results in the consideration of the colour sensations. Their investigations prove that both white and all possible colours can be produced by mixtures of the best prismatic red, green, and blue, and by mixtures of no other colours. The different means of producing the spectrum for the study of colours were described. An experiment presenting to the eye the prismatic colours in their greatest purity merging into darkness, also the colours of all possible parcels of continuous prismatic rays, was shown, being produced by viewing figures represented on a white ground. The means of determining the colours which lie between two given colours were as follows: One by Newton's disc revolving; and by placing spots of the colours to be mixed laid a little distance apart upon a neutral ground equally illuminated, a clean slip of thin polished glass is held vertically between them, the reflection of the one may be made to fall upon that part of the glass through which the other is seen. The more obliquely the light impinges on the glass, the more light is reflected, and the less transmitted; so that by lowering the eye from a position high and near to the plane of the glass to a position opposite to its lower part, every colour intermediate between the colours of

the two spots may be seen. Sea-green, pink, and yellow were given as the binary compounds, termed usually secondary colours. Qualities of colour were considered at some length ; but this portion of the subject will not admit of abbreviation or abstract. The different efforts of Mayer (1758), Otto Runge, of Hamburg (1810), and Chevreul to construct a natural system of colour were described, and the defects of their plans shown ; and, lastly, the colour cube was explained according to Maxwell's theory.

JOTTINGS FROM THE "PEKIN GAZETTE."

ABSTRACT OF REV. S. BEAL'S PAPER.

(Read March 16th, 1876.)

THIS lecture was intended to show the character and constitution of the different Chinese Boards, that carry on the government of that empire.

Various extracts were read, illustrating the mode of petitioning the Crown (as we should call it), and the different rescripts in reply, illustrating the character of the legislative and executive branches of the government.

ON ELOCUTION.

ABSTRACT OF MR. PIERCE TAYLOR'S PAPER.

(Read March 23rd, 1876.)

THE lecturer began by informing his audience, that he appeared before them with a subject which usually excited too little attention in this country, but which concerned all persons who wished the productions of intellect to be placed before them in the most complete manner.

After enumerating these, of course including oratory, prose, and poetry in all their forms, he proceeded to state (in answer to a

question put by himself), that his said subject was Elocution, and to describe its nature and derivation at considerable length, showing that it was neither discourse, whether in prose or verse, nor eloquence, but complementary to both, and tantamount to expression in music, as lately explained and taught by a Monsieur Lussy.

He observed, with reference to that gentleman's work, that if musical expression could be taught, so, *a fortiori*, could elocution, but that genius alone could carry formulæ to their highest pitch of utility, and even snatch a grace beyond them. Genius being then characterized, he asked whether study, practice, and genius were required for the attainment of elocution, and whether it was therefore an art, and (in reply to himself) answered both questions in the affirmative, adding, that, though perhaps more easily learnt than some others, it was an art that must always greatly attract, delight, and influence mankind.

He next suggested the impossibility of success on the part of orators, historians, advocates, and preachers who neglected elocution, and the great discredit that would fall upon poetry, if its rhythm, grace, fire, and delicate beauty were not duly set forth by its exponents. He then went on to assert, that elocution was, in fact, the histrionic art—with less attention to pose, gesture, and facial expression, but, nevertheless, the soul of the said art, as being the manager of the voice, without which its other characteristics, aforesaid, would possess neither significance nor propriety. Having asked why, under all these circumstances, elocution was so seldom heard of in this country, he proceeded himself to answer the question, by making the average Briton set forth his objections to it at length. These he made out to be, its uselessness in the present state of society; its non-necessity to a man who really had anything to say, and who could resort to print for what others said, without reference to their manner of saying it; the discredit into which preaching and poetry had fallen; the sufficiency of theatres to the drama; his inability "to see" himself reading aloud to his family, and his dislike to persons who did so, or spouted in public, because he had an idea that they were generally conceited beasts.

After taking up and answering these objections, seriatim, the lecturer attributed the Briton's dislike of elocution to sheer hatred of trouble, fear of ridicule, and *mauvaise honte*; and, after

describing the way in which he was wont to exhibit himself when called upon to speak in public, on a subject even perfectly well known to him, and his astonishment and despair at his failure, took pains to comfort him, and to explain what he must learn and do to make him eventually successful. In doing so he specially directed his attention to study and thought; the acceptance of advice and instruction from the cognoscent; the abolition of self-consciousness and *mauvaise honte*; and practise, by speaking and reading to the poor, or to his family, but *not to cabbages*. (Here he introduced an anecdote from "Menagiana," of a poor student who, having been accustomed to practise his Latin oration before rows of that esculent in his garden, broke down in presence of the dons of his university, with the despairing exclamation, "Domini, bene video quod non estis caules." My Lords! I well perceive that you are not cabbages.) Conceding that practice might be difficult for a man who had no family, nor other human *corpus vile* upon which he could inflict it, he cited Demosthenes declaiming to the "sad sea waves;" Molière to his housekeeper; and his Scotch tutor to cows and rabbits, as personages who were fully aware of its value, and resorted to different remarkable ways of carrying it out.

Having adverted to the apparent ease with which a Parisian workman, or Neapolitan Lazzarone, made a speech on a congenial subject, when an average Briton, similarly situated, would fail, the lecturer attributed the fact to the freedom of such foreigners from fear of ridicule and *mauvaise honte*, and observed that it suggested another reason for the Briton's dislike to elocution; viz., his uneasiness at hearing others successfully perform that which he shrank from attempting himself. In reinforcement of this suggestion, he stated, that the same had been the case with the pursuit of music, by men, fifty years ago, when he heard an officer of the 10th Hussars tell a comrade, who was talking enthusiastically of his piano, not to mention such a machine, because he could not help thinking any *man* who played upon it a beast. Congratulating his hearers upon the change which had taken place in regard to music since that time, he declared that during the intervening period, he had often felt great astonishment at the equal dislike shown by his countrymen for public reading, which he had always considered to be a most charming intellectual pleasure. He added, however, that he saw signs of a satisfactory

change in the penny readings which had lately become rife, and the example set by certain families, and particularly that of a friend whom he saw present, and expressed a hope that his compatriots would shortly overcome their unreasonable antipathy, and make up for lost time, in every direction.

Turning, in the next place, to the practical pursuit of the art of elocution, he acknowledged that a votary thereof could not succeed in mastering it without a complete knowledge of the language in which he had to read or declaim, proper pronunciation and accent, a reasonably good voice sufficiently sympathetic and flexible to express all passions and feelings, skilful management of the same, quick perception and intelligence of the gist and nature of what he had to read or say, calmness in the midst of excitement, and ability to keep within the bounds of nature.

In explanation of the latter quality, he parenthetically quoted Hamlet's advice to the players, from Shakespeare, observing that the immortal bard had, very probably, introduced it into his drama for the instruction of his own troupe, who must have taken it to heart, and laid it by for future use. After the above quotation and commentary, the lecturer resumed enumeration of the qualities which an elocutionist ought to possess; and further mentioned quick grasp of human nature and character, enabling him to personate any presented individual with correctness and facility. In this, he said, genius was largely shown, because it was, in fact, a natural gift which could hardly be learnt, though the study of history and dramatic poetry, joined to careful observation of human types, would be likely to supply its place to a considerable extent. He further set forth that a public reader, or speaker, ought to be able to meet applause, or its opposite, with equal calmness, to raise his voice in such a manner as to be audible to every one of his hearers, and to retain such a command over it as to prevent straining and hoarseness. He then cautioned all elocutionists against violent and useless gesticulation and bad habits, such as certain tricks of Bokhara Wolff, the late Sir Robert Peel, Lord Brougham, Lord Macaulay, John Knox, Burke, and various Scotch ministers, celebrated by Archdeacon Ramsay, which he described in detail, pointing out that, as such were apt to excite the derision of an audience, general effect must be injured thereby.

After this, he turned to persons naturally unfit to attempt elocution, such as stammerers, thick and disagreeable speakers, and

those who were unable to pronounce certain letters, or to put aspirates in their right places.

Of their shortcomings he gave examples. He also mentioned individuals who spoke pompously, or feebly, or with a provincial accent, declaring it to be his belief that stammering and mispronunciation might be curable, while the last-mentioned defect was so, to his certain knowledge, as he had heard a young clergyman preach with an extraordinary brogue and manner, very many years ago, and also, at a later date, without the least remnant of those peculiarities being perceptible. Having given an imitation of his first style, he added that the energetic minister in question had subsequently become famous as a preacher, and eventually obtained a bishopric.

Here the lecturer, remarking that, if he had had time, he could have named other things that went to the completion of a good elocutionist (such as a feeling heart, a pleasing personal appearance, &c.), brought his main address to a close, and proceeded to support his positions by various examples of prose and poetry, ushered in by appropriate remarks.

His prose examples were :

1. Sir William Napier's description of the last charge of the British troops at the battle of Albuera.

2. An extract from Lord Brougham's anti-slavery speech of 1838.

3. An extract from the peroration of the same celebrated advocate's last pleading for Queen Caroline.

4. The distressing account of the inebriety of Mr. Pecksniff, at Todgers' ; extracted from the " Martin Chuzzlewit " of Charles Dickens.

The poetical examples were :

1. Adam's Morning Hymn, from " Paradise Lost."

2. An ode of Collins, called " The Passions."

3. Byron's beautiful piece, without a name, but which might be called " Satiety," beginning—

" There's not a joy this world can give like that it takes away."

4. A portion of the fourth scene of the second act of the same poet's " Manfred," in which the hero has converse with the spirit of his sister Astarte.

5. Walter Scott's description of the combat between Fitzjames and Roderick Dhu, at Coilantogle ford, from " The Lady of the Lake."

6. Croly's " Thermopylæ " (a lyric piece) ; and

7. The second scene of the first act of Shakespeare's play of " Richard III." in which he persuades the Princess Anne to marry him.

In a preface to the poetical examples, the lecturer indicated the way in which verse ought to be read, strongly insisting upon the preservation of rhythm and music, without which it was apt to make a more disagreeable impression upon an audience than the dullest prose. He also objected to the voice being dropped too low in cadences, which habit tended to prevent the last words of many lines from being heard at all, even at short distances.

Before he read the scene from Shakespeare, he defended it from objections of improbability and contrariety to nature, urged against it by certain critics, by bringing to the notice of the meeting the historical marriage of the Cid Campeador, Ruy Diaz de Bivar, to Donna Ximena, which took place under circumstances similar to those of Richard and Anne, though the manner of wooing adopted by the great captain was very different from that of the crafty Yorkite prince. He added, in support of the probability of such a wooing as that of Richard being successful, that the poet's acquaintance with the female sex most probably led him to the knowledge that there were women who could be dazzled and fascinated by it. Before leaving his desk, the lecturer offered some respectful and guarded observations upon the too general neglect of elocution by the clergy, in the course of which he represented, that the impressiveness of the liturgy, lectionary, and Bible could not be kept up, nor congregations be made to listen to them attentively, unless more spirit and unction were exhibited in their services; that sermons also required to be skilfully and tellingly enunciated; that the neglect so much complained of arose chiefly from habit and custom; and that, were it to disappear, nearly all the reproaches of coldness, apathy, &c. heaped upon our Anglican establishment by its enemies, would fade into silence, like the wail of disappointed wolves, while the attendance and attention of congregations would be amazingly increased.

JUSTICE AND LAW.

ABSTRACT OF MR. R. COLLIER'S PAPER.

(Read 30th March, 1876.)

THE lecturer, after congratulating his audience that law reform had at last been taken up in earnest by the judicial bench, said that for a good example of a thoroughly vicious system of law it was unnecessary to go back further than the time of Blackstone. He then gave an outline of the state of the law a hundred years ago, noticing some of the reforms since effected, and observed that most people who had considered the subject were now pretty well agreed that up to a tolerably recent period the laws of England, so far from being, as its eulogists asserted, the perfection of human wisdom, savoured very strongly of pedantic folly. The lecturer adopted the view of Sir H. Maine, that there are three stages in the progress of law reform, the means employed to alter the law in primitive societies being usually fictions, while in more advanced societies equity steps in, and lastly the legislature interferes. He gave instances of law reforms effected through the instrumentality of (1) fictions and (2) equity. He discussed the jurisdiction of equity in relieving against penalties, and observed that although some jurisdiction of the kind was rendered necessary owing to the extremely defective state of the law, the equity judges had in some instances allowed zeal to outrun discretion. "The judges," said the lecturer, "have gone the length of deciding that certain kinds of agreement must be deemed to mean what the judges think ought to have been the intention of the parties, rather than what the parties themselves have declared to be their meaning. This high-handed interference on the part of the judges would never have been sanctioned but for the remarkable circumstance that persons were actually in the habit of putting their hands to written contracts which did not, in point of fact, express the real intention of the parties. This childish

kind of contract still survives to be a disgrace to the English law, and is called a mortgage. Nearly every mortgage deed contains an express stipulation that if the money is not repaid on a specified day the estate shall belong absolutely to the mortgagee. It is needless to say that this stipulation does not represent the real intention of the parties. It might be supposed that the obvious remedy against this state of things would have been for persons to give up the practice of executing deeds which did not express their real intention. This simple and efficacious remedy failed, however, to recommend itself to the profession, and mortgages continued to be drawn in the old form, till matters became so bad that something had to be done, and the equity judges hit upon the heroic expedient of obliging the parties to act as if the mortgage deed had in fact been drawn up as it ought to have been. Thus far equitable interference was warranted, and indeed rendered necessary, by the childish technicalities of the law. But a dangerous precedent had been established. The endeavours of equity to promote fair dealing between man and man by overriding the express provisions of written contracts have in some instances been attended with absurd results. For example, it has been decided that a stipulation in a mortgage, that on failure of punctual payment the rate of interest shall be increased, cannot be enforced, on the ground that such a stipulation is only inserted for the purpose of securing payment at the rate agreed upon, and therefore if the mortgagor pays up all arrears with interest, no more ought to be required of him. But there are more ways of killing a dog besides hanging, as conveyancers very soon found out, and the only result of this merciful decision has been to alter the form of the stipulation, the practice now being to reduce the rate of interest on punctual payment, instead of raising it if the payments are not punctual; that is, instead of calling the rate of interest 4 per cent., with a stipulation that it shall be increased to 5 per cent. if not paid punctually, the rate of interest named in the first instance is 5 per cent., with a stipulation that on punctual payment 4 per cent. only shall be demanded. The one stipulation of course comes to just the same thing in the end as the other, but equity in its wisdom has, nevertheless, decided that the one stipulation can, and the other cannot, be enforced; a lame and impotent conclusion indeed. This, however, is not the only instance in which equity permits its principles to be set aside

by a verbal quibble. It has been decided that conditions in general restraint of marriage are void as being contrary to public policy ; if, therefore, a testator leaves his estate to his daughter, with a proviso that if she marries it shall go to some one else, equity steps in and defeats his projects by giving the estate to the daughter, discharged of the condition. But all husbands might have been effectually kept off the estate by giving it to the daughter only until marriage. This, says equity, is a *limitation*, not a *condition* ; we can't interfere here. The wise conclusion, therefore, is, that although marriage cannot nominally cause a forfeiture of an estate, it may yet put an end to the enjoyment of it." The lecturer recommended that the doctrine that conditions in restraint of marriage are void, should either be entirely abandoned or else full effect given to it by holding that a limitation until marriage should confer a life interest. He then discussed the doctrine of equity which regards certain conditions in restraint of marriage as mere empty threats, not intended to operate at all, conditions which are known as conditions *in terrorem*. "For instance," said he, "if a testator bequeaths an annuity to his wife, with a proviso (which is quite legal) that it shall cease if she marries again, but does not expressly name any body to whom the annuity shall be transferred in that event, equity decides that he did not really intend that the annuity should cease on his widow's second marriage, but only meant that she should think so, and thereby be intimidated into remaining faithful to his memory." After dwelling at some length on the intricacy and absurdity of the law relating to conditions in restraint of marriage, the lecturer concluded his remarks upon equity by acknowledging that with many defects the system had many excellencies which he did not propose to point out ; first, because they were expatiated upon in every text book ; and, secondly, because he considered that when any ridiculous and glaring defects remained, it was more becoming in a great nation to try and devise a suitable remedy than to gloss over what was amiss by boasting of achievements in another direction.

"If the British army," said he, "were to sustain a defeat, the British soldier would humbly direct his attention towards guarding against a repetition of such a disaster, and would not occupy his time in talking of the battle of Waterloo ; the British lawyer, on the contrary, seems to consider it his duty to call particular atten-

tion to the excellencies of the law, and in most cases to ignore, if not to defend, its defects ; I have taken an opposite view of my duty, and hope, by a candid statement of what is amiss, to draw attention to the necessity of providing a remedy."

The lecturer then commented on the law of evidence, and contended that accused persons should be competent to give evidence, though they should not be obliged to answer any question unless they chose ; but if they answered untruly, they should be liable, like other witnesses, to the penalties of perjury. In his opinion the claims of mercy were abundantly satisfied if a prisoner was allowed to hold his tongue, and if a person had put himself into such an unfortunate situation that his guilt might reasonably be presumed from his silence, he could not think but that he richly deserved to be convicted. What the law in effect said to a prisoner was this : "It is probable, if you were allowed to speak, that you would be obliged either to confess yourself guilty, to tell a barefaced lie, or to be silent ; in any case you would be convicted to a certainty ; therefore, in case your silence should be construed into a confession of guilt, we will kindly shut your mouth. You may, it is true, if you are innocent, consider this a mistaken kindness ; but, on the other hand, if you are guilty, you will not fail to appreciate the considerate manner in which you have been treated." The lecturer then adverted to the inconsistencies in the law relating to the admission of confessions in evidence. He then discussed the admissibility of hearsay evidence, and proposed that with some exceptions every judge should be empowered to admit any evidence which he considered sufficiently material. He concluded with some general observations on law reform, which was, he said, the most potent engine of professional education, one reform, by educating the professions, paving the way for the next, so that he did not despair of seeing the time when justice, united to law, should reign supreme, and every legal quibble which threatened to divorce them should be hunted down and extirpated remorselessly by the united efforts of the bar and the bench.

THE LATE MR. W. J. HENWOOD, F.R.S., F.G.S.

DURING 1875 the Institution lost one of its most valued corresponding members, the late Mr. W. J. Henwood, F.R.S., F.G.S., who nearly fifty years since took a rather active part in our proceedings, and delivered some important lectures in connection with his special study, that of metalliferous veins, on which he was the highest authority, and as such enjoyed a world-wide reputation. Mr. Henwood had visited almost every mining district of the world, and was for some years the manager of very important gold mines in South America. Of the Royal and Geological Societies he was at the time of his death one of the oldest fellows. He was a self-made man. Placed early in life at the merchant's desk, his application and abilities led him eventually to a foremost position in the scientific world. His talents would have commanded respect in any walk in life; but they were early directed in one particular path by the Messrs. Fox, his first employers and unswerving friends. A shrewd and patient observer, Mr. Henwood accumulated, as the result of years of labour in Cornwall, and in all parts of the world, and underground as well as on the surface, thousands of valuable facts from which have been deduced rules for miners and mining. His knowledge of mining, and of geology, mineralogy, and metallurgy commended him to the notice of the Duchy, and he was appointed assay master. On the commutation of the Duchy coinage dues by the Government, Mr. Henwood gained a handsome pension, and thenceforward was free to follow his favourite studies. In his case leisure never merged into idleness. His practical knowledge was such that he was induced to go to Brazil and India to inspect and report on mining properties. Nor was his mind narrowed to the inquiries and studies we have indicated. He was a general as well as a diligent reader. Travel, biography, general literature—all in turn engaged his attention. Especially was he interested in the resources of his native county. His annual addresses as president of the Royal Institution of Cornwall, showed

how popularly he could employ his talents, and how well he could use the stores of information at his command. Mr. Henwood's memory was also most retentive. He knew something of every leading man in the county, and about every locality. His conversation, therefore, was most instructive, and was made the more enjoyable by his store of anecdote, which seemed unfailing. Mr. Henwood was born at Perran Wharf, near Truro, January 16th, 1805. He was the eldest son of John and Mary Jory Henwood. "The Bibliotheca Cornubiensis" records that in 1828 he wrote on the steam-engine; in 1830 supplied the Cornish mining terms for "English's Glossary of Mining Terms;" and from 1832 to 1838 was the Assay Master and Supervisor of Tin in the Duchy of Cornwall; and he was so voluminous a writer that the enumeration of his works and papers occupies nearly seven columns of the admirable book we are quoting from. His chief works were on metalliferous deposits and mineral veins, his observations on which constitute three large volumes of the "Transactions of the Royal Cornwall Geological Society," and gained for Mr. Henwood a few months before his death the Murchison medal of the Geological Society of London. Mr. Henwood died of heart disease in August, 1875.

OCCURRENCE OF SABINE'S SNIPE NEAR PENZANCE.

I OBSERVED a very good example of this variety of snipe a day or two since. It was killed near the celebrated Lanyon Cromlech, in Madron. It uttered when roused the same lispng screech as the common snipe. It is difficult to say whether this bird has any specific value, or is a permanent variety of the common species. Mr. Gould does not admit its specific value; and the number of tail-feathers appears not to be confined to twelve, which was looked upon formerly as a good point of distinction. One I examined some years since had fourteen, and, strange to say, the present example evidently had fourteen belonging to it, although I could count but twelve actually existing; but there was evidently the space for two more on one side, and the perfect side of the tail had seven feathers.

EDWARD HEARLE RODD.

Penzance, January 8th, 1876.

PLIMOUTH MEMOIR'S

Containing

A chronologicall account of that Corporation,
A catalogue of all the Mayors; together
with y^e memorable occurrences, in their
Respective yeares, the oaths taken by severall
officers, in said Corporation, particularly of the
Freemen, both befor, and upon y^e Regulation;
1684. the chartar then granted by K. CHARLES
the second, a list of the government at the
serving of the Quo warranto, &c.

Collected by James Yonge.

1684.

[Edited and annotated by R. N. WORTH, F.G.S., Hon. Mem.
Plymouth Institution. 1876.]

[PLYMOUTH MEMOIRS.]

Two MS. volumes were presented to the Plymouth Institution in 1831 by Dr. James Yonge, which had been written by his ancestor, James Yonge, F.R.S., in the closing years of the seventeenth and the opening years of the eighteenth century. One of these is an autobiography of the writer; the other contains a collection of matters relating to the corporate history of the town of Plymouth, with quaint and characteristic contemporary notes. The bulk of these "Plymouth Memoirs," as Yonge aptly termed them, will be found in the following pages. Such portions of the volume as were merely of general and not of local interest, and copies of documents which are either of little importance in regard to the borough history, or may be found easily accessible elsewhere, have been omitted. The remainder is given precisely as the writer left it. For the purposes of elucidation, and in some cases of correction, it has been, however, found necessary to append a series of notes, which may be distinguished from the original either by being between brackets or in smaller type; and advantage has been taken of this to embody the results of a careful examination of the ancient acts and constitutions of the Corporation, as found in the Corporate Records; so that the "Plymouth Memoirs" may now be regarded as presenting a fairly accurate general idea of the old corporate life, when the mayor and his brethren exercised power of such extent that the borough was in all essential particulars a little republic, owing indeed certain service to the king, but in the management of its internal affairs absolute and supreme.

Yonge used in the preparation of his "Memoirs" documents which are not now known to exist, and which were probably destroyed or lost in the havoc made among the Corporate Muniments when the Old Guildhall of his time was removed, at the commencement of the present century. The most important Corporate Records which now remain are the "Black Book" and the "White Book," though there are Receivers' accounts of an earlier period. The Black Book is a large volume, in which it was evidently intended to enter all matters of importance connected with the town. It contains copies of several orders and documents of an earlier date than that at which it commences (the first dated entry therein is of 1540); a record of mayors from 1440 down to 1710, with notes of important occurrences in the respective mayoralties—partly therefore of a contemporary character; lists of the freemen admitted under the various mayors; and several entries of a miscellaneous kind. When the names of the mayors as given in the Black Book

differ in spelling from those in Yonge, the Black Book form follows between brackets. Where the autographs of the mayors themselves as preserved in the Records vary from either, the variation is also given between brackets, in italic. The White Book, named, like the Black Book, from the colour of its back, may be described as the Corporation Statute Book, since it chiefly contains entries of the acts and orders of the council, for which purpose it was presented to them by John Ford, mayor in 1555. The first entry is dated 1560, and the book continued to be used down to nearly the middle of the last century. The letters B.B. and W.B. distinguish the notes derived from either of these sources.

Dr. Yonge, the writer of this book, was born at Plymouth February 27th, 1647. At nine he had learnt to read and write, and was sent to the Latin school under Mr. Horsman. At eleven his father, who was a surgeon, bound him apprentice to Mr. Silvester Richmond, surgeon of the *Constant Warwick*, for eight years. In 1660 he became surgeon's assistant on board the *Montague*, in which vessel he took part in the expedition to Algiers. Subsequently he made sundry voyages as surgeon on board fishing vessels to Newfoundland, and in May, 1666, was captured by a Dutch vessel, and imprisoned at Amsterdam and Rotterdam until the following year. Returning home, he again went surgeon to Newfoundland, but finally settled down in Plymouth in 1671, on March 28th of which year he married his wife, Jane Crampborne. He became surgeon to the hospital and troops, and to the Dockyard when that was founded, won high reputation, and enjoyed large practice, making frequent journeys into different parts of the country. In 1694 he was chosen mayor, and in 1702 was elected a fellow of the Royal Society, and made a licentiate of the College of Physicians. He died on the 25th July, 1721. From him are descended the Yongses of Puslinch. Dr. Yonge wrote several scientific treatises, and was a learned man after the fashion of the time. He appears to have been very successful in his profession, and by it amassed a good estate. He was, as the pages of these Memoirs indicate, a staunch Church and King man—indeed a Jacobite—a firm friend, and a good hater.

The Freemens oath, befor the Regulation, 1684.

You sweare, to be true & faithfull to o^r sovereign L^d y^e king, his heirs and successors, and you shall be obedient, and Ready to the Mayor, his ministers, & keepers of this Burrough, officers under y^e king; the Franchise, and franchises, libertyes, and Customes of this Burrough you shall keep, and maintain, after y^r power; *and as farr forth as you can, you shall save this Burrough harmles, ags^t y^e King, and all his Leige people*, and you shall be partaker of all manner of charges, touching this Burrough, as in sumons, Contributions, watches, wards, tole, taxe, and Tollage, as other freemen be of this Burrough after your power, you shall avow noe forraigners goods, as your own goods, nor buy and bargain with any forraigner, or stranger In your own name, to y^e use, behoof, & proffit of another forraigner, and stranger, whereby any Custom, or duety may be Lost or withdrawn, from y^e Mayor and Commons of this Burrough. You shall take noe apprentice for less than seven yeares, and within that tyme, you shall see thém taught, and Instructed of some honest mystery, craft, or occupation. And If you shall hereafter know any forraigners, merchants, or handy crafts men, that shall use to buy, or sell, or practice any craft, continually within this Burrough, not being free of y^e same, you shall then give warning thereof, unto the Mayor, of this Burrough, for the tyme being, or his officers. and you shall not Implead, or sue any person, out of this court, or courts of this Franchise, or liberty, of any action, cause, or quarrell, that Is pleadable, or determinable within y^e said court, or courts, holden and kept here within the precincts of this Burrough, and you shall give & keep In counsell, of all things that shall come to your knowldge, concerning the publique weal of this Burrough, and you shall wear noe man's Livery otherwise than y^e Law Suffereth and permitteth, *& you shall maintain no cause, or quarrell, ag^t y^e Mayor, & comons of this Burrough*, and you shall pay yearely for your freedom to the Mayor and Co^monalty sixe pence. to these points, and all other things, touching this franchise, & Liberty, you shall truely keep and observe, as nigh as God shall give you grace, see help you God, &c.

A Catalogue of all the Mayors of Plimmouth, with the most remarkable occurrences of their times.

Divers endeavours, were long used, by the inhabitants of *Sutton* alias *Plimmouth*, to obtain a Chartar, and be incorporated into a *Mayor & Commonalty*, in order to w^{ch}, when the writs *ad quod damnum*, were executed, the Prior of Sutton (who was the principle man here) fearing the diminution of his power, did still obstruct it, till about* the midle of the reign of *Henry the Sixth*, y^e french having beaten him out of all that his father had won in *france*, did come over, and plunder, and burn y^e small, and weak places on our coast. this made the inhabitants petition the parliament for a chartar. an Act was framed the 18th yeare of y^t King [1439-40], and they were incorporated 1440. (The old Audit Book sth 1641.)

* [In the margin is here written :] This proves a mistake for y^t was not done in many yeares after, tho at this tyme the Brittaines did pillage the weak and unfortified places on our coast.

Yonge is in error here. There is abundant evidence that the corporate history of Plymouth begins at a date far more remote than that of the Act Charter of Henry VI. Three centuries ago, the then town clerk made entries in the White Book of copies of a number of deeds which, bearing the names of mayors of Plymouth as witnesses, proved that it was a "mayor town" long before 1440. It is, in fact, very clear that what the Act Charter effected was an extension—or rather, perhaps, an amalgamation—of existing authorities. Under the Charter the town of Sutton Prior, the tything of Sutton Ralf, part of the hamlet of Sutton Valletort, and part of the tything of Compton, were combined into the one borough of Plymouth, by which name indeed they had been long commonly known. Sutton Prior had been governed for the Prior of Plympton by a portreeve. I believe the ancient corporation, the extension of the borders of which the Act Charter effected, held jurisdiction in that part of the borough which from time immemorial has been called by the name of Old Town, now known by the modern term Old Town Street. Here stood Sutton Valletort, or Vawtier; and as Baldwin de Redvers in 1241 chartered the town of Plympton Earle, so I believe that one of the Valletorts chartered his town of Sutton Vawtier, or as it came to be commonly called, Plymouth. Browne Willis avers that the Valletort estates escheated to the Crown on the death of Roger de Valletort, 1290. The "*Nomina Villarum*," 7th Edward II., assigns Sutton Rauff to John de Dalecurta, and Burgus de Sutton to the Prior of Plympton. The earliest mention with which I am acquainted of a corporation of any kind in Plymouth, is a letter written in May 31, 1289, by the bailiffs and commonalty to the king,

concerning the preparation of a ship for his service. The seal of the commonalty of the town of "*Setton Syper Plymmoth*" occurs on a deed of 1368. In 1377 letters patent directing the fortification of the town were addressed to the mayor and bailiffs and honest men and commonalty. The names of several ante Act Charter mayors have been recovered; and seeing that I accidentally came across one in a document loose in a miscellaneous bundle in the State Paper Office, I am not without hope that more may yet be found. Those known are:

- 1310 Richard le Tannere, prepositus of Sutton.
- 1313 William Berd, prepositus, also member.
- 1318 Richard Tannere.
- 1325 Edward de Northcote, prior's prepositus.
- 1370 Maurice Berd, mayor.
- 1377 John Venour, mayor of Sutton.
- 1381 William Honyton, mayor.
- 1383 Humphry Passour, mayor.
- 1395 Walter Crocker, mayor of Sutton.
- 1397 Richard Row, mayor.
- 1398 Walter Dymcock, prepositus.
- 1399 to 1403? Walter Pollard, mayor.
- 1408 William Bentele, mayor.
- 1412 William Rogherene, mayor of Plymouth.
- 1413 William Bentley, mayor of Sutton.
- 1414 Henry Boon, mayor of Plymouth.
- 1418 William Bentley, mayor.
- 1439 William Totwell, prior's portreeve of Sutton.

With the exception of the few years during which the Charter granted by Charles II. in substitution for its predecessors was in force, until the old Charters were re-granted by William III., the government of the town from 1440 until the date of the Municipal Reform Act, 1835, was in the hands of a mayor; twelve aldermen, magistrates, masters, or capital burgesses; and twenty-four assistants or common councilmen—familiarly known as the twelve and twenty-four.

1440. Henry VI.

- 1440 1. W^m Kitherige [Kethriche].

"Thys was the First mayre namyd by the Kynge and made by acte of payment."—B.B.

- 1440-41 2. Walter Clovelly [Clovelley].
- 1441-42 3. W^m Pollard.
- 1442-43 4. Jn^o Shepley [Schepeley].
- 1443-44 5. W^m Nichols [Nycoll].
- 1444-45 6. W^m Nichols [Nycoll].
- 1445-46 7. Jn^o Shepley [Schepeley].
- 1446-47 8. Jn^o Facye [Facye].

1447-48 9. Jn^o Carwinnick.

The old Audit Book (began in *Hen.* 8. time) sth
Jn^o Paige.

John Carwynnak was elected member in 1441.

1448-49 10. Jn^o Facy.

This & the precedent are not in y^e old Audit
Book.

By the Audit Book here Yonge means the Black Book; the old Audit Book, properly speaking, is the book of the Receivers' accounts, which commences in 1446. This is one of the variations from the Black Book which shows that Yonge drew some of his material at least from another source.

1449-50 11. Jn^o Paige.

1450-51 12. Stephen Chapman [Chepeman].

1451-52 13. Stephen Chapman [Chepeman].

1452-53 14. Tho: Greyle [Tregle].

1453-54 15. Vincent Patilysden [Petelysden].

Also chosen member.

1454-55 16. Vincent Patilysden [Petelysden].

1455-56 17. James Dernford [Dorneforde].

1456-57 18. Vincent Patilysden [Petelysden].

1457-58 19. Jn^o Carwinnyck [Carwynyk].

The french under y^e L^d *fulney*. burn many villages,
and small tounes on y^e west coast.

1458-59 20. Tho: Greyle [Tregle].

1459-60 21. W^m Yogg [Yogge].

1460-61 22. Jn^o Pollard.

1461-62 23. W^m Yogg [Yogge].

1462-63 24. Jn^o Paige [Page].

1463-64 25. Jn^o Rowland.

The fee farm rent of £41 reserved under the provisions of the Act Charter to the Prior of Plympton was reduced in 1464 to £29 6s. 8d., in consequence of the "povertie and dekaye" of the town. In the next century it was reduced to £1 13s. 10d., at which it stood until January, 1875, when it was redeemed on payment of £40 to Mr. W. Latham, the then proprietor.

1464-65 26. Jn^o Rowland.

1465-66 27. Jn^o Rowland.

Sheep sent to *Aragon*. w^{ch} Increased. and did
o^r nation much hurt.

Elected member 1467.

1466-67 28. Rich^d Bovy.

1467-68 29. W^m Yogg [Yogge].

1468-69 30. Jn^o Paige [Page].

1469-70 31. Jn^o Rowland.

1470-71 32. W^m Yogg [Yogge].

The earle of *Warwick*, and y^e d. of Clarence, brother to *Ed.* 4. coming out of France Land at plymouth (tho y^e chronicle say *dartm^o*) proclaim K. *Henry*, increase in numbers, and marching to *London*, force *Edward* to flye into *Burgundy*. see phillip de *Comines*. lib. 3. cap. 5.

1471-72 33. W^m Paige [Page].

1472-73 34. Richard Bovy.

1473-74 35. Nic^o Heynstoll [Heynscott].

It seems by the old Book of y^e town to be Heynscott.

1474-75 36. W^m Paige [Page].

The earliest act, or order, or constitution—all these terms are used—of the council extant is under this mayoralty of Paige's. It is in the Black Book, and enacts that no man should be free of the corporation unless he were a whole or half-brother of Our Lady and St. George's Guild—a whole brother paying 12d., and a half-brother 6d., quarterly unto the wardens. Each of the twenty-four was to pay yearly 8d., and each of the twelve 12d., under the like penalty of disfranchisement. And no foreigner was to be made free. The act concludes: "This was appoynted by the hoole Councill of the Toune And John Yogge, John Shippen and other foreyns putte owte of theyre freedom." This act is stated to have been ordered by the mayor and commonalty; nearly all the later ones are ascribed to the mayor, the twelve and twenty-four, either without qualification, or to "the most part thereof." But there is one instance in the sixteenth century, in William Weekes's mayoralty, where it is added, "with the assent of most part of the Commons assembled in Guildhall." Under this act it has been usually held that Yogge, who had a chief share in the building of the St. Andrew's tower, and who had formerly been Mayor, was disfranchised; but Mr. Brooking Rowe has thrown very grave doubt upon this assumption by pointing out that, while the mayor is called William, and the tower-builder Thomas, the disfranchised Yogge is called John. Unless these names are in error, the town cannot have been guilty of the ingratitude attributed to it. The priest of the Guild was appointed by the mayor and council, in the same manner as the town clerk.

1475-76 37. Nic^o Heynstoll [Heynscott].

1476-77 38. Nic^o Heynstoll [Heynscott].

1477-78 39. Jn^o Pollard.

1478-79 40. Nich. Heynstoll [Heynscott].

1479-80 41. W^m Rogers [Rodgers].

A charter granted to the Tailors' Craft; the only one of which there is any trace.—B.B. The corporation from time to time made stringent bye-laws for the regulation of certain trades, especially those connected with the victualling of the town—bakers, butchers, brewers, hostlers (innkeepers), and the like—and against forestalling and regrating.

1480-81 42. Tho: Gregorthead [Tregarthen].

1481-82 43. Tho. Greswell [Tresawell].

1482-83 44. Nicholas Heynstoll [Heynscott].

1483-84 45. Tho. Greyson.

1484-85 46. Pearse Craswell [Pers Carswell].

1485-86 47. Tho: Tresawell.

1486-87 48. Tho: Greyson.

1487-88 49. Nich^o Heynstoll [Heynscott].

1488-89 50. Perin Earle [Peryn Erle].

1489-90 51. Tho: Greyson.

Regulations made by mayor, twelve and twenty-four, concerning the use of copes and vestments in burial offices, and fees to be paid for the same.

1490-91 52. Nich^o Heynstoll [Henscott].

Roger Machado, ambassador to Spain and Portugal, who visited Plymouth in 1489, mentions Nicholas Aynsle, Knight, as a leading inhabitant. Doubtless this was Henscott.

1491-92 53. Jn^o Painter [Paynter].

1492-93 54. W^m Thickpenny [Thykpeny].

Elected member 1495. He was also one of the customers of the port.

1493-94 55. W^m Thickpenny [Thykpeny].

Act passed banishing from the town Nicholas Law and Avys his wife, not to be four days and four nights therein henceforth, under "xx^{li} penalty."—B.B. An act of the council passed on the same date as the preceding (July, 1492) sets forth: "yf any pson or psons of the Inhitauunce of the said Toune rebell and dysbey the mayer for the tyme being or distvrbe and lett him to doo and execute even Justice within the said Boroughe or drawe a knyfe hanger swerde upon the Mayer or sett his hondes vpon his knyve hanger or swerde entending to drawe it vpon the Mayre or Bill Axe or Cleve or any other Abylements of werre, or letting of the Mayre and his officers to mynistre their office according vnto the Kinges lawes then hit shalbe at the libertye of the said Mayre to punishe him or theym so offending in svche pryson within the said Boroughe as it shall please him." The act goes on to state that freemen are to be imprisoned in the Guildhall; that any one declaring the counsel of the town to any foreign person shall be punished at the mayor's discretion, put out of the council, and disfranchised for ever; and afterwards proceeds: "Also yf any pson or psons in tyme coming seke any helpe and Mayntenaunce of any lorde, knyght, or any other what degree or

Condition he be of, agenst the Mayre for the tyme being in letting and disturbing the said Mayre to execute his office, that he or they so offending lese theyr fraunchises within the said toune for ev^r and to make a fyne and redempcion by the discreccion of the Mayre and Counsell."—B.B.

1494-95 56. Tho: Bigport [Bygporte].

wheat sold In plymmouth for 6d pence a bushell,
bay salt at 3d $\frac{1}{2}$ p^r bushell, and Herrings at 3s 4d
p^r barrell.

1495-96 57. W^m Nichol [Nycoll].

Act that any of the twelve absent from Guildhall at 9 a.m. on Lambert's-day without special cause shown to the mayor should be fined 6s. 8d.; of the twenty-four, 3s. 4d.; of the commons, 20d. This to be declared by the parish priest in the pulpit yearly, the Sunday before. Persons refusing to take office to be imprisoned by the mayor in the hall, there to abide until they found surety, "or they passe the said hall to take the said office vpon theym vpon payne of x^{li} or more and larger fine as the case requireth."—B.B.

1496-97 58. W^m Rogers [Rodgers].

1497-98 59. Tho: Tresawell.

Elected member 1496.

1498-99 60. Jn^o Painter [Paynter].

1499-1500 61. Jn^o Ilcombe.

1500-1 62. W^m Byle.

1501-2 63. Tho: Cropp.

1501 october. The Princes *Katherin* of Spain, landed at plim^o, was marryed to Prince *Arthur*, then to *Hen.* 8, who divorcing her, begat y^e quarrell between him & y^e Pope, and was followed by a happy Reform.

Leland states that the Princess lodged in the house of Paynter, undoubtedly he who was mayor two years previously.

1502-3 64. Jn^o Horsewell [Horswell].

1503-4 65. Jn^o Painter [Paynter].

1504-5 66. Jn^o Brewen [Brewne].

A dry Summer, noe rain from Whitesuntide, to
Later Lady day, viz. Sep^r 8.

1505-6 67. W^m Trigle [Tregle].

1506-7 68. Tho: Tresawell.

1507-8 69. Simon Craswell [Carswell].

1508-9 70. Jn^o Painter [Paynter].

1509-10 71. Rich^d Oewe [Gew].

- 1510-11 72. Walter Pollard.
 1511-12 73. W^m Brooking [Brokyng].
 1512-13 74. Jn^o Grisling [Gryslyng].
 1513-14 75. Jn^o Pound [Pounde].
 ✠ Omitted W^m Brooking, Jn^o Painter, Jn^o
 Brewen, Jn^o Herford, W^m Randell, John Pound.
 1514-15 [Wm. Brokyng].
 1515-16 [Jno. Paynter].
 1516-17 [Jno. Brewne].
 1517-18 [Jno. Herforde].
 1518-19 [Wm. Randall].
 1519-20 [Jno. Pounde].

The numbering of the mayors is Yonge's own. It is incorrect here and elsewhere.

- 1520-21 76. W^m Randell [Randall].

Order that none of the freemen should be absent St. Lambert's-day, but by special leave. Fine for non-attendance: aldermen, £5; council, 40s.; freemen, 12d.—B.B.

- 1521-22 77. Stephen Pors. Pers [Pers].
 1522-23 78. Thomas Bull.
 1523-24 79. Jn^o Bovey [Bovy].
 1524-25 80. W^m Brooking [Brokyng].
 1525-26 81. Jn^o Pound [Pounde].
 1526-27 82. Jn^o Herford [Herforde].
 1527-28 83. Henry Bickham [Bykham].

Corn deare. y^e sweating sicknes Rageth.

- 1528-29 84. James Horswell.

Elected member 1539-42-43.

- 1529-30 90. W^m Brooking [Brokyng].
 1530-31 91. W^m Randell [Randall].
 1531-32 92. Jn^o Bigport [Bygporte].
 1532-33 93. W^m Hawkins [Hawkyngs].

Father of Sir John, member 1539-47-53.

- 1533-34 94. Xp^r Moor [Moore].
 1534-35 95. Jn^o Elliott [Elyott].
 1535-36 96. James Horswell.
 1536-37 97. Tho: Bull.
 1537-38 98. Tho: Clouter.
 1538-39 99. W^m Hawkins [Hawkyngs].
 1539-40 100. Tho: Byrte.
 1540-41 101. Jn^o Thomas.

This yeaere a great ship of portugal ladan with [pepper and other—B.B.] spice was cast away on german Rock at *plym?* much Spoyl made, & great inquisitions and divers imprisoned on that account [moche spoyle made as well by the portyngales as by englyshmen of Plymouth & of the comons of the contrey—B.B.].

1541-42 102. Tho: Mylles.

1542-43 103. James Horswell.

One Ferrers serving plym^e In parliam^t this yeaere, being arrested on an execution by y^e sheriffe of london, he was fetcht from y^e Counter, an act made to free him of y^e debt, and the Sherriffe Imprisoned. See *Rd. Baker*, Chronicle, page 289.

1543-44 104. Tho: Hollowy [Holwaye].

1544-45 105. Tho: Clowter.

1545-46 106. W^m Randell [Randall].

1546-47 107. Lucas Cock [Coke].

Some of the earliest entries in the White Book refer to the purchase of the great bell. In addition to outside subscriptions, Feb., 1560, it was ordered that each of the twelve should pay xx^s., and each of the twenty-four x^s., towards this object.

1547-48 108. Jn^e Elliott [Elyott].

1548-49 109. Rich^d Hooper.

“In this yere was a greatte insurrecyon throughoute all the Royallme of England & esspecially in the Counties of Devon and Cornwall in w^{ch} tyme the Cytee of Excestre & the Castell of Plymothe were valyently defended and kepte from the Rebelles vntyll the comyng of the lord Russell . . . then was our stepell burnt wth all the townes evydence, in the same by Rebelles.”—B.B. What this steeple was I cannot think. Not St. Andrew's tower, for that is standing now; not the tower of the White Friars, for that was standing several years later.

1549-50 100. W^m Weekes [Weeks] [*Wiks*].

In this man's mayoralty the cornish, devonshire & sumonsire men, began to Rebell, besieged *exon* but were defeated.

The same disturbance as recorded (B.B.) the previous year.

1550-51 111. Jn^e Kainsham [Keynsham] [*Keynsam*].

1551-52 112. Tho: Clowter.

1552-53 113. Jn^e Thomas.

A John Thomas commanded the *Marigold* in Drake's circumnavigation.

1553-54 114. Lucas. Cock [Cocke].

The Earl of Oxford and other "men of worship" sailed from Plymouth for Spain to wait upon King Philip on his journey to England.—B.B.

1554-55 115. Jn^o Ilcomb [Ilcomb].

1555-56 116. Jn^o Ford [Forde] [*Ford*].

1556-57 117. Tho: Clowter.

1557-58 118. Jn^o Derry [Dery] [*Derry*].

1558-59 119. W^m Weekes.

Act of the Council that the mayor should have £20 yearly towards his expenses, and power to modify certain feasts. He might keep the feast for Michaelmas-day on the Law Court-day next after. The dinner on St. Stephen's-day was to be at his pleasure; and at Law-day after Easter and Michaelmas he was not to be charged "with any dyet for more persons then hit shall please hym to desire for the decent accompanyent for the Recorder."—B.B. In Slanning's mayoralty this was so far modified that the Michaelmas-day feast was again ordered to be held thereon, only if Michaelmas-day should happen to be a fish-day, then either on that day or the Sunday following, at the mayor's discretion.—B.B.

1559-60 120. Lucas Cock [Cocke] [*Coke*].

Capt. Cock, the only Englishman of note killed in the attack on the Armada, at which he commanded his own vessel, was of this family; probably son to Lucas Cock and brother to Gregory, hereafter mentioned.

1560-61 121. Jn^o Elliot.

Fine of £10 ordered for such as refused the office of mayor.—B.B.

Christ. Borowe licensed to have a weaver's shop open for a year.

Fine, 1s. 6d.—W.B.

1561-62 122. Edw^d White [*Whyte*].

William *Lake* was chosen, but hee dying Nov^r

10 Edward *White* was chosen in the stead of him.

Henry White (of Plymouth?) was captain of a vessel at this period; and among other names of members of families which gave mayors to Plymouth, and captains to the fleets of Drake, Howard, and Hawkins, are those of William Hawkins, William Sparke, Thomas Ceely, James Fownes, John Young.

1562-63 123. Jn^o Ford [Forde]

1563-64 124. Jn^o Derry [Derey] [*Derry*].

No person to buy or cause to be bought meal brought to the town, on pain of forfeiture.—W.B.

1564-65 125. Nicholas Slanning [Slannyng].

Previously (1552) town clerk; member 1558.

1565-66 126. Nic^o Bickford.

Order made September, 1566 or 1567, that every person whatever, born within the borough and apprenticed in the same, and any person born

without the borough and apprenticed therein, should pay 18d. on being made free, and no more. All others admitted to the freedom to pay ten shillings.—W.B.

Order made in 1566, "Mr. Mayor willetth and requireth" that all persons who had received alien servants within the space of one year were to discharge them within a month, on penalty of ten shillings per month fine.—W.B.

In the same year there appears the first of a series of orders made with regard to the sale of pilchards, then a most important article of local diet and trade. No alien was to lade or buy fresh pilchards above the number of 1,000 in one day; no man, not being free, to buy or sell above 5,000. In Drake's mayoralty it was ordered that any person suspected of selling or promising to deliver pilchards before they were saved, or of having received money beforehand from any non-inhabitant to make [cure] the same, should be called before the mayor and questioned thereon on oath, and if guilty, not allowed to make any pilchards that year. No woman, whether wife, widow, or servant, was to set or make a price for or upon any pilchards brought into the town, under penalty of ten shillings fine (to be paid by the husband or master, if no widow) and personal punishment at the mayor's discretion. In 1584 a more stringent order to the latter effect was made, including hake, but allowing women to make provision for any household. Persons bringing hake to the town were to sell to every freeman equally some indifferent portion. W.B.

1566-67 127. Jn^e Ilcomb.

Fine for refusing the mayoralty raised to £20.

September 17th, 1567, John Ford released and disburdened of office of mayor from Lambert's-day, 1568.—W.B.

1567-68 128. W^m Hawkings [Hawkyns].

Margaret Edwards, late wife of Henry Edwards, ordered to leave the town. Not to return on pain of whipping or other punishment. There are several entries of the banishment of "vagabones."

"In this yeare the waches on mydsomer nyght was renewyed wch had not beene vsyd in xx^{ti} yeares before that tyme."—B.B.

Orders made for the good keeping of Sutton Pool.—W.B.

1568-69 129. Lucas Cock [Cocke].

Cock was released, discharged, and disburdened, September 22nd, 1568, of the office of mayor, at the expiration of his mayoralty, for ever.—B.B. There are other similar resolutions.

On the presentment of the Grand Jury, 1568, order made that persons damaging or destroying hedges or fences within the Liberty should be placed in the stocks three market-days.—W.B.

Ordered that no burgess [member] be chosen, but "onelic suche men as be toune dwellers and the counsell of the toune." In 1601 it was ordered that one should be a freeman.—W.B.

1569-70 130. Jn^e Martin [Martyn].

The new conduit built by W^m Hawkings.

Freemen to pay 10s. a year licence for selling wine; unfree, 20s.—W.B.
 Fine for refusing the office of mayor raised to £40.—W.B.

1570-71 131. Gregory Cock.

The plague in *plymouth*.

Order in 1571 that all feasts and banquets should be utterly done away. No mayor to keep any. Six years to elapse instead of four before a mayor could be re-elected.—W.B. In 1597 this was increased to eight years.—W.B.

1571-72 132. W^m Hallowy [Holowaye] [*Hollowaye*].

Every person who sold London beer to pay 6d. (?) per hogshead; none to be sold above 4d. a quart.—W.B.

1572-73 133. Jn^o Blyman [Blythman].

The free school of plym^o built. as also the key on South side from the Barbican northward, under full sea mark; In length 130 foot and In breadth 44.

Ordered that every person should aid the constables as required. Every inhabitant to have in some convenient place in his house a good black bill or a clubbe to find in any time of strife, upon penalty of 3s. 4d.—W.B.

Each of the twelve to provide himself with a decent scarlet gown within one year after his election, on penalty of 40s.—W.B.

1573-74 134. W^m Brooking [Brokyng].

1574-75 135. Jn^o Amadis [Amadas].

1575-76 136. Walter Peprill [Peperell] [*Pepperell* or *Pepell*].

1575. Ordered that no one buy wine, commodities, or merchandise, coming to the town by water, without having made the mayor privy thereto, in order that, if desired, the mayor and his brethren might buy for the town. If so bought, every freeman was to take the share of such goods apportioned him.—W.B.

Walter Deeble disfranchised for sundry misdemeanours; not to be admitted again until he paid £5.—W.B.

1576-77 137. Jn^o Ilcomb [Ilcombe, sen.].

S^r Francis *Drake* departs plym^o on his voyage about y^e earth. *Nov^r* 13. 1577.

1577-78 138. Gregory Maynard [George Maynard] [*Maynarde*].

Francis Earl of *Bedford*. and his Countes. y^e Erl of *Northumberland*, L^d *Norrice*, L^d *Wharton* &c came to plym^o and were honorably received at the towns cost.

1578-79 139. W^m Hawkins [Hawkyngs].

Brother of Sir John Hawkins, himself a sea captain.

1579-80 140. Gregory Cock [Cocke].

Nov 3 1580. S^r Francis *Drake* Returns from his voyage, was wanting 2 yeares & $\frac{3}{4}$. brought great

treasure. the king of *Spain* seiseth the kingdom of portugal. whose king, came into England, and Lay a while at M^r *Edgcumb*.

1580-81 141. Jn^o Blithman [Blitheman] [*Blythman*].

The plague was soe great in *plym^o* that this Mayor was chosen on Catdown. the old book saith of this great plague died, 600 persons: a sign *plym^o* was then but thinly peopled. and a small town.

B.B. puts this under the mayoralty of Cocke, which is correct.

"In this yere also the southermost tower of the castell was newlie repeared and covered wth leade."—B.B.

1581-82 142. S^r Fra: Drake.

Who put up the Compas on the Haw.

Member 1593.

1582-83 143. Tho: Edmonds.

Ale stakes put down and signes sett up.

Scarlet Gownes first worn In *plym^o*

the sluice made within the new key.

the fuming houses within the town put down.

1583-84 144. Jn^o Spark [Sparke].

S^r R *Grenvil* sayles hence to *Virginia* 6 ships.
600 men.

K. of Portugal comes to *Plim^o*

Mr. white gave y^e union Cupp value £13:6s:8d.

No captain or governor of St. Nicholas Island to be appointed but such as were thought meet for the place by the mayor and commonalty.
W.B.

There is an entry in the White Book of Spark providing a sufficient cellar for all strangers' goods, without the town being charged with rent.

1584-85 145. Xp^r Brooking [Brokyng] [*Broking*].

Barbican Staires built. y^e q. give a rent of £39:10:10 for the maintainer of y^e Iland. S^r *Fran. Drake* goes for y^e W. Indies Sept 14 with 24 ships & barks, 20 pinnaces & 3000 men.

1585-86 146. Tho. Ford [Forde] [*Ford*].

George

1586-87 147. Gregory Mainard [George Maynard].

S^r F. *Drake*, with 12 ships, sailes from *plym^o* 3^d Aprill. burnt at *Cales* many of K. of Spaine's ships that were preparing for the Invation, took a

great *Carriak* of 1000 tons laden with spices, & brought her home. corn scarce through the Kingdom. the Judges came to see the town.

Ordered (1586) that a foreign shipload of rye should be bought for the relief of the poor people in Plymouth and its neighbourhood.—W.B.

Inhabitants who did not do their duty or find some efficient substitute in the night or day watch, to be fined 8d.—4d. whereof to go to the sergeant for procuring another; 2d. to the sergeant for his pains; 2d. for the poor men's or man's keep.—W.B.

In Aug., 1587, it was ordered that any who, on any attack being offered by the enemy, should absent themselves or any way withdraw themselves out of the town, against their duty and allegiance, should forfeit all his or her goods and chattels within the liberty of the town, be utterly disfranchised, and never restored, and never again allowed in the town to dwell.—W.B. Yet in February, 1593, John Sparke wrote the Privy Council that many of the inhabitants were leaving because they had heard the Spaniards intended to burn the town next summer.

The masters were empowered to act in other divisions as well as their own.—W.B.

1587-88 148. W^m Hawkins [*Hawkins*].

The Queen's fleet of 120 Sayl under Comānd of y^e L^d *Howard s^r F. Drake*. & Hawkings arrive at plym^o went to meet the Armada July 21. the following sunday appear before the Harbor. Spanish *Armada* Invade England and are destroyed.

1588-89 149. Humphrey Fownes [Fones] [*Fownes*].

All who would not pay their rates to be fined according to station. Aldermen, 40s.; councillors, 20s.; freemen, 10s.—W.B.

1589-90 150. Jn^o Blithman [Blitheman] [*Blythman*].

Aprill 18th 1589. S^r Jn^o *Noris* and S^r *Francis Drake*, sayle from plym^o with y^e King of *Portugal*, to endeavour to restore him, but could not. they came to the gate of Lexboa.

[Entered over name:] In m^r Blythman's Mayoralty I finde the town agreed with s^r *F. Drake*, to bring in y^e watur and gave him £200 in hand.

"This yere the northermost tower of the castell was covered wth leade. & 7 brass peices were playnted vpon the iiij castells. this yere likewise were the platteformes at hawe tymbred. the gate at cocksyie w^{ch} is to be shutte every night was newe made & a greatte platteforme by the gate att Iland & the wall neere the same containinge 251 [or 7] pole was nowe newly made."—B.B.

There is a curious entry in the White Book, setting forth who should

inhabit the Castle "in time of warre," as directed by Mr. Mayor (Humphrey Fownes). It would seem that in case of alarm the council went into residence, not of course for their own personal safety, but for the better management of the defence. "North easte tower—Mr. H. Fownes, mayor, Mr. Baron, gent., Mr. Bagge; Peter Sylvestre, John Battersby, Thoms Reynoldson, Robart Trelawnie, John Elton, James Pickforde. Southe east—Mr. Blythman, Mr. Pepell, Mr. Sparke; Mr. Thomas Drake, Mr. Martyn, Mr. Westlake, Robte. Mydwynter, John Facy. South weste—Mr. Phillippes, Mr. Whyte, Mr. Gayne; Wm. Dounewhin, Nicholas Sheri, Wm. Browne, Vyncent Scoble. North west—Mr. Edmond, Mr. Trelawnie, Mr. Hytchens, Mr. Goddarde; Mr. Parker, Walter Mathew, Wm. Rogers, John White, John Foxe." From the arrangement, the first names in each case (those here separated from the others by a semicolon) are evidently those of the aldermen.

1590-91 151. Walter Pepperill [Pepperell] [*Pepell*].

About this time divers platfformes on the haw began to be methodised Into a fortification Regular, which was afterward made the fort of plym?

Dec^r 1590 S^r F Drake began on the Rivulet, and brought It into the town (25 myles) 24 Aprile following, and before Michealmas built 6 mills. 2 at *Wythy*. 4 at y^e town. also divers conduits.

Tax laid on pilchards saved, &c., except for household use, of 8d. per last, towards defence of town.—W.B.

1591-92 152. Jn^o Spark [Sparke]

Ordered that the masters should go with the mayor every court-day to Guildhall, on penalty of 12d. fine.—W.B.

1592-93 153. Jn^o Gear [Gayer] [*Gayre*].

the fort built, on the haw-cliffs.

"This yere the Toune builded some of the Conduytts."—B.B.

1593-94 154. Jn^o Phillips.

The gallery was boght in the old Church, neare this tyme. The cage of bells were cast for plymouth church.

April 26, 1594, ordered that the "dicke from the old mylls shoulde be fourth wth repayred even vnto the Castle wall." Mr. Strode to be withstood touching a building he pretended to make in the lambhay.—W.B.

The Judges on circuit came to see the town, and were "nobly entertained."—B.B.

1594-95 155. George Barnes [Baron] [*Barons*].

The B.B. places under this mayoralty the casting of two new bells at the town's "only charge."

"S^r Frauncis Drake and S^r J. Hawkyms went to the West Indias with xxxvj. sayles of shippes & pynnaces & both dyed in the Journey."—B.B.

1595-96 156. James Bagg.

S^r *Francis Drake* died. 1595.

The expedition under y^e E. *Essex* for Cales. they sayle from hence viz plymmouth. June 1595.

Member 1604.

1596-97 157. Humphry Fownes.

Wheat was sold for 30s. bushell plym^o measure. and barly twelve. the Gallery finished, and the church yard enclosed.

Order made for the regulation of fishwomen, who appear in the estimation of the twelve and twenty-four to have unduly multiplied. The order makes selection of those approved by name.—W.B.

1597-98 158. Jn^o Trelawny [Trelawnye] [*Trelawny*].

The conduit at fox hole built.

1598-99 159. Jn^o Blithman – martin white [Martyn Whyte J. Blythman].

Martin White, dying *Blithman* succeeded.

This yeare our west country were apprehensive of y^e Spaniards and therefor made Gates Barracadoes. & had 4000 men & some horse under comand of y^e *Earle of Bathe*.

They remained “about 3 weeks and were well lodged and entertayned to the great comforte and encouragement of the Toune and countrey, who yf itt pleased God that the Enemye shoulde come were then readie and willinge to fighte.”—B.B.

Inhabitants rated towards the cost of fortifying and defence.—W.B.

Order concerning the wearing of scarlet for “the better decenye and reputation of the towne.”—W.B.

1599-1600 160. Rich: Hichings [Hitchens].

A new charter graunted, y^e quondam Mayor to be Justice of peace, the following yeare.

Two of the masters died, and two others chosen. Four of the twenty-four chosen, a town clerk, and three constables.—B.B.

A great controversy “through wronges offered to the Toune by Mr. Crymes touching our Ryver.”—B.B.

Ordered that no freeman take any into his house not free or stranger without leave of the Mayor.—W.B.

1600-1 161. Tho: Pain [Payne] [*Paine*].

22 chests of Popes Bulls, Pardons &c. burnt in Plym^o market place.

This year our charter was renewed.—B.B.

1601-2 162. W^m Parker.

Smarts kay built. A great E. India Carrick
Prize sunk between y^e Iland, & main.

“Key made down by John Smarts dore.”—B.B.

Water not to be taken from the great pipe without leave, on penalty
of £40.”—W.B.

1602-3 163. Jn^o Martin [Martyn].

The Conduit at [within the—B.B.] East gate (I
suppose the great Tree) built.

Ordered that no land be granted for term of years except in open
Guildhall.—W.B.

In 1602 and some subsequent years stringent orders were made against
those who spoke evil of the local dignitaries, using disparaging words,
and making slanderous speeches. In 1605 it was enacted that every such
offender should be imprisoned 10 days, without bail, and fined.—W.B.

Jan. 27, 1603, John Blithman fined 6s. 8d. for absence on sessions-
day.—W.B.

1603-4 164. Rich^d Hawkings [Hawkins] [*Hawkyms*].

The barbicon was new built.

s^r *Rich^d Hawkings* came home but the yere
[before from the] South sea, where hee had been
prisoner to the [Spaniards] or 9 yeres.

Member 1604; subsequently Vice-Admiral of Devon—the “complete
seaman.”

1604-5 166. Walter Mathew.

This Mathews was servant to s^r R^d as was his
wife to y^e Lady *Hawkings*, who disdaining to sitt
bellow one y^t had been her mayd, endeavoured to
keep y^e uper hand, w^{ch} the other attempting y^e
Lady struck her a box in the eare. It made great
disturbance, at length it was composed, and s^r
Rich^d gave y^e town a house, somewhere in ye
market street for satisfaction.

“This yere Walter Mathew maior bylded the newe conduit by the
Great Tree at Brittainne side att his own costs and charges.”—B.B.

1605-6 167. James Bagg [Bagge].

The Guildhall of plimmouth built by the town.
and the Old shambles.

According to the W.B., the order to build the Guildhall was made in
August, 1606.

1606-7 168. W^m Downname [Downeman].

1607-8 169. Rob: Trelawny [Trelawney] [*Trelawny*].

A prodigious snow fall.

In the reign of Elizabeth entries of apprenticeships were made in the corporation books, and sometimes attested by the mayor. There is an entry of the apprenticeship of this mayor in 1578: "George Maynarde, maior. The xvith daie of July in the xxth yere of the Queenes ma^{te} raigne that nowe is. Robert Trelawney the sonne of Robert Trelawney of St Germanes in the county of Cornewall gent put himself apptice wth George Burgoyne & Agneis his wief for viii from the date of the same Indent to be enstructed in the trade of merchandize & the said George and Agnes to kepe and maynteine the said Robert a convenyent tyme in Spayne or Portugall & in France and to make hym free of the Company of fiskemongers of the cytye of london and in thence double apparrell."

1608-9 170. Tho: Sherwill.

Member 1614-21-24-25-26-28.

1609-10 171. Jn^o Battersby [Buttersby].

Order made against the abuse of carrying beer in vessels through the streets on the Sabbath, being a breach thereof; penalty 40s. Leave given, beer might however be so carried for the supply of strange ships.—W.B.

1610-11 172. Tho: Fownes.

1611-12 173. Jn^o Trelawny [Trelawney] [*Trelarony*].

1612-13 174. Jn^o Waddon.

1613-14 175. Jn^o Scobell.

1614-15 176. Jn^o Clement.

Order that monthly collections be made in church for the relief of the poor and the releasing of captives.—W.B.

1615-16 177. Abraham Colmar [Colmer].

The foundation of y^e Hospitall, west from y^e Steeple Layd.

1616-17 178. Rob. Trelawny.

1617-18 179. Tho. Sherwill.

About Midsummer 1618 s^r *Walter Rawleigh* arrived at plymmouth after his unfortunate *Guiana* Expedition. hee was taken into Custody by s^r Xp^r *Harris*, viceadmiral in Devon, and sent to London, & in November following, was beheaded, at Westminster.

1618-19 180. Nic^o Sherwill.

1619-20 181. Tho. Fownes.

1620-21 182. Rob. Rawling [Rawlyn].

The dyal on y^e G.Hall Staires built.

1621-22 183. Jn^o Bound [Bounde] [*Bownd*].

Constitution that none but the Recorder's and justices' wives should sit in Mr. Mayor's seat in church.—W.B.

1622-23 184. Jn^o Martin [Martyn].

1623-24 185. Leonard Pomory [Pomery].

1624-25 186. Tho: Ceely.

King *Charles* Proclaimed, and marryed to *Henerita Maria* the french kings daughter, cometh to plymouth to despach a fleet.

The fleet was of 120 vessels, with an army of 6000.—B.B.

1625-26 187. Nich. Blake.

He [*i.e.* the King] calls a parliament and findes greatdiscontents, y^e presbyterian Interest prevayling, soe as to ferment y^e people. A great plague in plymouth, of w^{ch} dyed 1600.

Two thousand died, according to the B.B.

1626-27 188. Tho. Sherwill.

1627-28 189. Rob. Trelawny [Trelawnye] [*Trelawny*].

Duke of *Buckingham* stabd at portsm^o by *Felton*. being going to y^e releife of Rochell, the fleet proceeds, and sayld from plym^o September 1628.

who [Trelawny] dying [7th Dec., 1627] *Abraham Colmar* Supplied the place y^t yeare.

1628-29 190. Nich^o Sherwill.

1629-30 191. W^m Heall [Hele].

1630-31 192. Jn^o Bound [Bownd].

1631-32 193. Jn^o Waddon, fil. predicti.

Y^e Bells new cast.

Member 1640.

1632-33 193. Phillip Andrew [Andrewe] [*Andrews*].

1633-34 194. Rob. Trelawny, fil. predicti [Trelawnye] [*Trelawny*].

Member 1640; expelled and imprisoned 1641 for having said the House had no power to appoint a guard for themselves without the king's consent, on pain of high treason.

Ordered that six of the grand jury take cognizance of the lands belonging to the town yearly at Easter.—W.B.

Ordered that each magistrate, with his assistants, take order for cleansing the streets in their respective divisions.—W.B.

1634-35 195. Jn^o Martin, fil. predicti [Martyn].

1635-36 196. Tho. Crampporn [Crampporne].

My [*i.e.* Yonge's] wifes grandfather.

1636-37 197. Jn^o Caws.

1637-38 198. Nich^o Sherwill. 3^d tyme.

contest arising between y^e vicar, Dr *Wilson*, & y^e bench. they goe to law, when a decree is made

in Starr chamber, dividing the power of y^e church, between them. a copy is in this booke.

1638-39 199. W^m Heal. 2^d tyme [Hele].

Plym^o devided Into two parishes, by parliament.

1639-40 200. Rob. Gubbs [Gubes] [*Gubbes*].

1640-41 201. W^m Birch [Berthie] [*Byrche*].

1641-42 202. Tho. Ceely. 2^d tyme.

1642-43 203. Phil. Francis.

None to be chosen mayor who had been mayor within six years.—W.B.

Earl Stamford, writing from Plymouth February 7, 1643, to the Speaker of the House of Lords, says—Mayor of town is as brave a man as ever breathed, and they want nothing that his purse, credit, or power can help them to. Town then besieged so close that the enemy invited people to carry away the plunder of the town, then, when they had them in Devon, closed the passes, and obliged them to serve.

1643-44 204. Jn^o Caws. 2^d tyme.

prince *Maurice* assaults plym^o Sunday morning, in vain. plimmouth besieged by the Royalists.

1644-45 205. Justinian Peard.

1645-46 206. Bartholomew Nicols [Nicholl].

The new church. called *Charles* church, In plym-
mouth began. I was born feb. 27, 1646.

In April, 1646, in consideration of the charges of the mayors being so great, and the allowance so small that it caused them to exhaust their estates and neglect their private affairs, it was ordered that the rents and profits of the shambles should be settled on them. It was soon found, however, that the corporation were themselves in serious financial difficulties (without doubt the losses incurred during the siege had much to do with this), and the grant to the mayor was modified, his worship having to pay £13 a year, the old rent, and £30 interest of £600 advanced to the Poor's Portion, out of the market profits. Subsequently it was ordered that the £30 should be reimbursed by the corporation; and eventually, in 1738, when great efforts at retrenchment were made, a fixed allowance of £100 was substituted, with the use of the recently-purchased mayoralty house for the entertainments (restricted to feasts on Lambert's and Michaelmas-days, and cakes and wine on Freedom-day), the profits of the house going to the corporation.—W.B. The freeman's dinner was given up in the mayoralty of Mr. George Eastlake (1819-20), and the mayor's allowance stopped.

1646-47 207. Xp^r Ceely.

Member 1659.

1647-48 208. Rich. Evans [Evenes].

1648-49 209. Tim^o Alsop [Alsopp].

Member 1656-59.

- 1649-50 210. Oliver Ceely [Ceeley].
 1650-51 211. Rob. gubbes [Gubbes].
 1651-52 212. Phil. Francis.

A warr between y^e *English* & y^e *dutch*, Aug^o 16.
 1652. S^r G. *Askew*, & de *Ruyter* fight befor Plym^o
 Generall *Blake* beates them in divers fights, and
 length July 1653. our Immortall Monk, beates
 y^m on their own coast, where their great generall
Tromp, is Slain.

- 1652-53 213. Jn^o Maddock [Madock] [*Madocke*].
 1653-54 214. Ric^d Spurwell.
 1654-55 215. Jn^o Paige.

Almes houses, Northside S^t Andrews churchyard.

- 1655-56 216. Xp^t Ceely. 2^d tyme.
 1656-57 217. Justinian Peard.

Blake grown sickly, returnes home, & in sight of
 this port dyeth, was embalmed, his Bowells buried
 here by the Mayors seat dore. his corps at West-
 minster among y^e kings.

Ordered that no woman should go about "trucking" to ships without
 leave, under penalty of 5s. fine, and to be set in the [ducking] stool [at
 the Barbican] and haled up three times! The boatmen to be fined 5s.
 W.B.

- 1657-58 218. W^m Jeffery [Gefferie].

The new *shambles* in y^e midst of y^e old town
 street, built.

The new *Free school* finished.

The *New Church* finished.

Feb. 14 I was bound Apprentice.

Geffrie records in the B.B. this year the completion of the new church,
 after some disturbance by a "paltry pretended churchwarden." William
 Jennens appears to have been the person intended; for in his mayoralty
 he appended a note claiming the credit of the work for himself, and
 denouncing Geffrie.

- 1658-59 219. Samⁿ Norcott [Northcott] [*Northcot*].

Sept^r 3. *Cromwell* y^t great Rebell, went to y^e devill
 in a tempest.

His silly son *Richard* proclaimed protector, but
 soon turn'd out by the Army.

From Caws's second mayoralty—1643-4—to Samuel Northcott's,
 Yonge has placed a black border down the side of the list of mayors, on
 which, in white letters, are the words, "Hæc est ista Dies nigro Carbone

notanda." Sundry entries in the chronological record in the Black Book during the Commonwealth years have been obliterated by ink being brushed over them, much in the same way as the border was formed, and it is highly probable that this also was Yonge's work.

Northcote was a sufferer for conscience. Being required to give currency in church to a proclamation of Parliament, he refused from "scruples of piety," and was immediately sent for to London, and imprisoned. He and his son were subsequently prosecuted as non-conformists in Jennens's mayoralty.

1659-60 220. Jn^o King [Kinge].

Charles II. was proclaimed on the 29th of May "wth greate tryumph the Cunditts Running two dayes wth wyne. shortly after a curious psent of Rare wrought plate was psented his Maiesty by this corporation, which was graciously Accepted."—B.B.

1660-61 221. Oliver Ceely.

The Regicides executed at Charing Cross. Jn^o *Allured* of Plim^o for speaking Treason, his head set on our Guildhall.

This Alured belonged to Stokeinteignhead, and was beheaded in 1662. His head was set up "on a spill of iron fixed to a strong pole . . . strongly fixed on the highest and most visible part of the Guildhall," March 26th. Such were the directions of the warrant.

1661-62 222. W^m Allen.

The queen landed at *portsm^o* I being in y^e fleet. May 11.

Commissioners regulate Corporations, turn out Mr. *Hughes* from being vicar, Mr. Allen from being Mayor. &c. m^r W^m Jennens was put in by y^m Aug. 24. and chosen by y^e freemen. and served the yeare following.

There are entries of the proceedings of the Commissioners in the Black Book, from which it would appear that they made a clean sweep of the corporation. On Aug. 14, not Aug. 24, the ejections took place. Those who took the oath of allegiance and supremacy, but were ejected for refusing to subscribe the declaration under the Regulation Act, were: Wm. Allen, mayor; with Oliver Ceely, Xp^r Ceely, and Sam. Northcott, magistrates; Wm. Yeo, town clerk; Tho. Durant, Rd. Mayne, Tho. Yebsley, Jno. Joep, Nich. Karkite, Peter Gregor, Sam. Brett, Abr. Searle, Rd. Clapp, Wm. Trout. John Paige, magistrate, was ejected because of his absence and continued residence beyond seas. Just. Peard and Rd. Evens, magistrates, Rd. Tapper, Caleb Brooking, Daniel Ely, councilmen, were also removed. Aug. 16 there were appointed instead: Wm. Jennens, mayor; Jonathan Spark, justice; Wm. Shapecote, town clerk; Jno. Harris, Jno. Martyn, Jno. Webb, G. Strelly, J. Gubbes, magistrates; Sam. Bury, Ambrose Thomas, Wm. Warren, Tho. Stutt,

Hy. Pike, Wm. Symons, Jno. Lanyon, Rd. Fryer, J. Jackson, Peter Scadgell, P. Marke, Gregory Martyn, and Andrew Horsman, councillors. Henry Webb and Philip Edwards were appointed councillors on the 20th March following.

1662-63 223. W^m Jennens.

Dr. *Ashton* chosen Vicar of *S^t Andrews*.

This mayor. engaged y^e town in a lawsute ag^t my L^d *Arundell* for *Sutton* pool, and after y^e fatall expence of 2500£ were cast. and lost the pool. w^{ch} was worth 100£ p^r an^o & had been in the townes hand many yeares.

1663-64 224. Jn^o Harris.

1664-65 225. Jn^o Martin [*Martyn*].

Dr Seth *Ward* B^p of *Ecceter* cometh his trieniall visitation & consecrateth y^e *new church*. by y^e name of *Charles* church [2nd Sept., 1665].

1665-66 226. W^m Harpur.

The churchyard impalled, by m^r *Schagell*, churchwarden.

Royall Cittadell began to be built. & carryed farr on. this yeare.

In a later year a dispute arose between Elizabeth, Harpur's wife, and Anne, daughter of Jennens, respecting the latter's right to a seat in church with the magistrates' wives. Mrs. Harpur complained of her rival's conduct as greatly disturbing her in her devotions, dishonouring God in His service, and setting an evil example. Ordered that no magistrate's daughter above the age of ten, unless a magistrate's wife, should sit in the seat of the magistrates' wives.—W.B.

1666-67 227. George Strelly [*Strelley*].

The guildhall new built. The Dutch while we were treating with them, and noe navy at sea, came on our coast, burnt severall navy ships at *Chatham*, and De *Ruyter* being *Admirall* came on o^r Western coast, and divers times Anchored in y^e sound, but did no harm.

1667-68 228. Tho. Stutt.

Lambert y^t Arch Rebell brought prisoner to this *Iland* s^t Nic^o March 1668 *Cosmo de Medicis* prince of Tuscany, came to plim^o And after 2 day's, Travell'd for london.

1668-69 229. W^m Symons.

1669-70 230. Daniell Barker.

1670-71 231. W^m Cotton.

March 28th I was married.

July 17. following his m^{ty} Duke of *York*, D. of *Monmouth* came hither by sea, and lodged in y^e old fort (y^e houses in the [new] cittadell not finished.) and returned as far as *Dartm^o* by sea.

1671-72 232. Peter Schagell [Scaggell] [*Schaggell*].

Three new maces made.

The water conveyed into y^e Kennel of y^e broad street & y^t w^{ch} leadeth to dung kay. I made *chir^o* of y^e Hospital. The Compasse new erected on y^e Hoe.

My eldest son Jn^o was born Jan^y 8^h 1670.

Ordered that if either of the twelve or twenty-four were absent two years others might be chosen.—W.B.

Orders made for watching and cleansing. From Allhallow until Candlemas every one to hang out a light, on penalty of 4d. fine.—W.B.

1672-73 233. Jn^o Lanyon.

The exchange, or walk on y^e new Kay Built.

S^r Jn^o Skelton L^t Governour of y^e cittadell dyeth. Coll. *Hugh Piper* (afterwards Knighted) succeeds him.

1673-74 234. Henry Webb.

The walk, or *Exchange* on the Soutside built.

L^d cheif Justice *Rainesford* came to see y^e town.

July 18. my daughter *Jane* was born.

1674-75 235. Wil^m Weekes.

L^d Cheif Justice *North* came to see y^e town.

1675-76 236. Jn^o Dell.

28 March 1676. my daughter *Elisabeth* was born.

9th Sept. m^{rs} Katherine *Throwt*. my Wifes m^o Dyed.

1676-77 237. Andrew Horsman.

Aug. 1667. His m^{ty} & y^e duke of *York*, came by water to this town, staid 2 day's, his m^{ty} toucht for y^e evill in o^r great church, dined at M^o *Edgcumb*, & returned by sea. Oct 2. 1676. D. *Albemarl* came to town, and with neare 40 gent^s attending him, were made Free of o^r Corporat.

Bp. *Lamplugh* made his triennial Visitation.

Judge *Jones* came to see the town. Lay at y^e *Mayors*.

Dr. *Ashton* Vicar of s^t Andrews Dying, m^r Henry *Greinsworth* of S^t Udy in Cornwall succeeded.

1677-78 238. Will. Tom.

1678-79 239. Jn^o Munyon.

Barbican rebuilt.

My daughter *Jane* dyed of y^e small pox 28th June 1679.

My son *James* born Sept 11th following.

I was a Juryman this election.

1679-80 240. James Hull.

I was a Juryman at this Election, and chosen a co^mon Counsell man, and Receiver.

My father dyed Octob. 14. 1679.

m^r *Greinsworth* o^r vicar dying Aug 12. great dispute arose about a successor, y^e Rivals were m^r Jn^o *Gilbert* of Collompton, recomanded by y^e B^p

m^r Amos *Crymes* of exeter Colledge, m^r Nic^o *Claggett* of S^t Edm^o Bury commended by D^r *Stillingfleet*, & D^r *Tillotson* and m^r *Horneck* preacher at y^e Savoy, but by reason of Jarring we went not to election until Nov^r 1^t in the mayoralty of m^r

1680-81 231. W^m Symons. 2^d tim.

when the competition lay between m^r *Clagett* & m^r *Horneck*. The Mayor, & 3 Magistrates, with 8 co^mon counsell men, appeared for the former, 8 magistrates, and 3 co^mon counsell men appeared for y^e latter|| but finding their party inferiour, they withdrew and putting in caveats, we had a trial *Jus patronatus*, when the election was made null; and y^e Vicarige Suffred to Laps. and y^e B^p collated it to m^r Jn^o *Gilbert* above mentioned, who Indeed proved a most worthy man, tho m^r *Clagett* was liked by most. from hence grew great Animosities in y^e government but Indifferently Composed by the next Mayor.

[In the margin is written:] I were a Juryman this election; [and as a note:]|| y^e rest of y^e Governm^t were absent.

Yonge with this mayor drops ten in the numbering.

1681-82 232. Daniell Baker. 2^d time.

who was a prudent wary man, and endeavoured as much as possible to accomodate all y^e differences. I was a furor, viz one y^t chooseth y^e Jury, forto choose the Mayor this yeare.

I were chosen churchwarden this yeare of s^t *Andrews* Parish. I Rebuilt y^e Gallery. painted it, sett up y^e Kings, Towns, and B^{ps} Armes thereon: as also the Picture of *King Charles* y^e Martyr with pertinent Inscriptions. made a new clock. new poynted a very great part of y^e Roof. built divers new seats in y^e chancell and yet left my Successor above 50£ stock.

1682-83 233. Peter Foot [Foote].

My L^d Landsdown, and lady come hither.

The B^p made his triennial visitation.

Our contentions revived by y^e folly of this man set us anew into a flame, and at last broke y^e government in peeces for (Influenced by m^r *Jennens*, a crafty spightfull man the Mayor being a peevish, talkative Idiot) studyed all wayes of affronting y^e Co^mon Counsell, but cheifly by choosing a new way viz. without y^e Assistance of y^e co^mon Counsell by y^e Magistrates; thus they chose w^m *martin* & *Joseph Webb* & Immediately made y^e former a *magistrate*, this begatt great Regrett, but soon after, the fopp passing a Judgment ags^t y^e king, in a tryall about y^e excise; he was called befor the counsell, reprimanded, and y^e attorney gen^l ordered to Issue a *quo warranto* ag^t o^r chartar, this made the co^mon counsell quiet knowing It were invayn to dispute about a government, that would not long subsist.

An order in the Black Book, signed by Foot and other magistrates, eight in all, decrees that for the space of five years common councilmen shall be chosen by the aldermen only. The alleged grievance and reason were, that whereas the magistrates had been accustomed to nominate a certain number of freemen, out of whom the assistants chose their fellows, the common council had frustrated the good intentions of the magistrates by choosing persons of mean condition, instead of persons of quality and known loyalty. A note appended, in the handwriting of Yonge, denounces this as a usurpation.

1683-84 234. W^m Martin [Martyn].

this man though chosen a Magistrate an unusuall way, yet being loyall was almost unanimously elected; but scarce had he sat 3 moneths before a *quo warranto* came ag^t o^r chartar. m^r *Mayor* called us all together, and after some debate, it was put to y^e vote, and onely m^r *Jennens*. m^r *Cotton*. m^r *Barker*. m^r *Symons* & Cap^t *Cowes* oposed, y^e rest agreed to a Surrender. accordingly It was carryed up by y^e *May^r* his father, m^r *Pollexfen* y^e *Town Clark*. m^r *Horseman*. m^r *Ackerman*. m^r *Berry*. and servants, and surrendered to his M^{ty} at *Windsor*. m^r *Horsman*. & one of y^e sarjeants dyed in Lond^o. m^r *May^r* came away sick.

June y^e y^e New chartar w^{ch} his M^{ty} was pleased to graunt us arrived, was met at Ridgeway by the May^r governor. & above 300 Horse. brought to y^e Guildhall, & there read over, yⁿ carryed to y^e mayors house. and a treat being provided, y^e *kings*. *dukes*, &c healths were drank, the cittadell, Iland, and Ships In y^e harbour firing guns for neare an houre, having all theyre flaggs flying. The town standard also met y^e chartar at y^e gate, and was carryed by L^t *Depford* befor It till It was lodged. y^e Bells rang all the while, at night abundance of bonfires. &c.

Easter day my L^d *Dartm^o* Arrived In plym^o from *Tangeer*, w^{ch} he had demolished, & brought off y^e *Garrison*, &c. left 8 Companyes of foot here, and took with him those y^t were here in garrison befor.

In March S^r G. *Jeffry* the famously Loyal lord cheif Justice came hither from Launceston Assize, lay at y^e Mayors, veiwed y^e cittadell, m^o *Edgeumb*.

The winter of this yeare proved very seveare, East winde Frost and Snow continued 3 moneths, so y^t Ships were Starved in y^e mouth of y^e channel, and almost all y^e Catle famisht. ye fish left y^e coast, almost 5 moneths, all provisions excessive deare. & had we not had a frequent Supply from y^e East Corn would have been at 30s. per bushell, above

130,000 bushels being Imported hither, besides w^t went to *Dartm^o. Fowy &c.*

The Thames was frozen up some moneths, so y^t It became a small citty, with booths, coffee houses, Taverns, glass houses, printing, bull bayting, shops of all sorts, and whole streets made on it, the birds of y^e aire died numerously.

Lambert that old Rebell died this winter on plimouth Iland, where hee had been prisoner 15 yeares. & more

Aug^s 3. my daughter *Katherine* was born. 2 Sunday morning.

Yonge is the sole authority for the place of *Lambert's* death.

The new charter cost about £500.—B.B.

1684-85 235. Isaak Tillard.

This man was nominated in the new chartar to be first Mayor. he was a good man, but Lived not halfe his Mayoralty, but dyed In Monday. 2^d february. *K. Charles* dyed also neare y^t time. Soon after the mayor, his Receiver *Tim^o Hamlyn.* also died: a very good man. W Martin Succeeded in the Mayoralty by direction of my L^d Bathe, and m^r J. *Paige* made Alderman.

A terrible Cold winter, Catle dye for want of fodder.

K. James was Proclaimed here, Feb. 10. many new Regiments Levyed after Munmouths Rebellion, my Ld. *Bathe* had one, of w^{ch} I were made *Surg^o*

A Parliament was Called in *May.* and we of y^e bench chose among ourselves, without freemen or freeholders, though both protested ag^t it.

Aug^s W. *Davys* & Jn^o *Carkeet* chosen Assistants.

1685-86 236. Sam^l Madock [*Madocke*].

Feb. my daughter *Catherin* died.

Aug^s the B^p *Lamplugh* came histriennial visitation.

Lord Ch. *Justice Herbert* Visited us.

1686-87 237. Jn^o Trelawny.

A very worthy, understanding Gent. Strove hard ag^t the Election, to no purpose.

I was his Receiver.

Aug^o D. *Grafton* came into Plim^o with 6 of the Kings ships, the Q. of Portugal, daughter of the Duke of *Newburgh* going on him to Lixboa [driven by contrary winds].

S^r H. *Piper* L^t Governor & Alderman died.

S^r Nich. *Slanning* made Governor.

Mr. Phil. Wilcocks. Alderman. Jn^o Tom Assistant.

Nov^r 17 my son *Thomas* born, & died 2 days after.

Member 1690.

1687-88 243. Tho. Stutt. 2^d time. [Stat.]

This honest Gentleman was Mayor 1667. About the time of his taking the chaire, the Duke of *Albemarl* and his Dutches, put in here In their voyage to *Jamaica* where he went Gov^r he came not on shore, alth^o Invited, and stayd some weeks. my daughter *Cath*. Born 28 June.

1688-89 239 W^m Symons. 3^d

This man was twice Mayor befor.

Pr. of *Orange* Proclaimed K. In feb.

His declaration was read In the Guildhal, and Cittadel, In *December*, soon after w^{ch} the D [utch] fleet w^{ch} brought him over came into this Harbour, & wintred.

"In whose Mayllty God wrought with a wonderfull deliverance in these Kingdomes in rescuing us from Popery & Slavery, by bringing over from Holland the Prince of Orange with a Fleet of ships & some land forces wh landed at Torbay, Monday the 5th day Novemb. 1688, without any opposition and so went on for Exon; where the gentlemen and Countrey flocked unto him & soon after all the Tounes and Garrisons in England declared for him (Plymouth being the first)." — B.B.

1689-90 240. Philip. Andrew [Philip Andrews].

Soon after this honest Gentlemans Elect^o 4 Regiments of Sold^{rs} were sent here to embark for Ireland, and 400 ships wintred here. so that great Infection happned, and above 1000 people buried In 3 months. W^m *Martin* Alderman dyed, no great loss. the french appeared with a great fleet befor our harbour, sayling Eastward, where they Beat us, and the Dutch befor y^e Ile wight. we lost y^e Ann of 70 guns. y^e Dutch lost sixe. K. W. then in Ireland.

We apprehended the french might attacké this harbour, made new forts, & kept In arms, with good Watching. Xmas day a great Storm, the *Heneritta* and *centurian* cast away here, & D. man of warr 70. G.

1690-91 241. Jn^o Paige.

In this Gentlemans Mayoralty happned nothing memorable, but that the dock in Hamhoas was began, & that the 2^d Sep^t at the end of it, a storm drove our Grand fleet then on y^e Coast into this Harbour, where the *Coronation* of ninety gunns was Sunk, and men drownd except 14. and the *Harwich* of 74 Gunns Lost under m^t Edgecomb

Russell In the Britannia Admiral of y^e Red. *Kelligrew* In the Duke of y^e Blew here was also y^e Sovereign &c

1691-92 242. Jn^o Martin. 2^d [Martyn.]

This honest old Gent. was mayor once before.

In Aug^o my L^d ch. Justice *Holt* came from Lancaster to see the town.

Sep^t the Bishop S^r *Jonth Trelawny* made his Triennial Visitation the first time.

1692-93 243. Jn^o Munyon.

This man was a Second time chosen. Mayor. nothing Memorable but fitting up an empty space on the new Key, by w^{ch} It became a very Graceful Square.

Alderman *Stukeley* dyed this Aug^t

my Brother chosen Assistant, & Rec^r N[athaniel] Y[onge]

1693-94 244. Ph. Wilcock [Wilcockes] [Willcox].

Alderman *Stutt* died in Exeter. My selfe, & Robert Berry were in the Midsummer Sessions, chosen Aldermen.

1694-95 245. James Yonge.

Dec^o the Lord *Cutts* came to town, Lay at my house, 3 Regiments quartered in town, to be embarked for the *W. India* by this Lord. gave me great trouble in Quartering them.

Alderman Dell died January. no Loss.

Q. Mary died Dec^o 28.

My daughter Joanna marryed that day to m^r S. *Haris*.

June My L^d Marquis of *Carmarthen* son and heir to the Duke of *Leeds*, being RereAdmiral of the blew. came into port, spent an evning merrily at my house, & treated me wth y^e Governor, &c next day on board the *Lenox* very nobly. wth Gunnes.

In August filld up both Benches, by chosing, *Jn^o Rogers*, *Nic^o Edgcumb*. W^m *Munyon*, and m^r Tho: *Bound* Aldermen. Tho *Burgoyne*. James *Bligh*, Tho: *Darracot*, W^m *Lovel*. Ben *Berry* & W^m *Wyat* (who had been my Apprentice) Assistants.

The new-key fild up to the outside of the Slipp befor m^r *Allen's* house, and all new paved over.

In June this yeare Mr *Fall* an officer of y^e broad seal being In town, and the people universaly desiring to have the old chartar, I emplyd him in conjuction with m^r *Trelawny* one of our Aldermen, & Burgess for the town, then in Parliament, & Rob. *Berry* who was town Atturney, and then going to London. to endeavour a Restitution thereof. But Berry hoping to be next Mayor, and to have the honor of getting the charter Restored In his time, and to do it for his own advantage. so embarrast the thing that nothing was done, altho m^r *Fall* undertook to do it so effectualy, & cheaply. w^{ch} Sinister old to the ruine of the church Infor

1695-96 246. Rob. Berry.

This man was an Atturney served the Town Clark, by w^{ch} he knew how to get y^e towns mony, w^{ch} he did to y^e purpose, as may be seen in y^e Audit books, where it appeares he hath had vast summes for Law charges, chartars, &c I having filed y^e benches with such men as would not be accessary to his designs, he goeth to London, and attempts to get our old chartar Restored, and framed such a body of men to fill the benches as would be sure do as he would have them. but God defeated his project, for my L^d *Bathe* being put out of y^e Governm^t of the

cittadel. & Lieutenant of the 2 county^{es}, and some of us opposing the List of men y^e Mayor had destyned. he came home *Re Infecta*. and Spent y^e rest of his mayoralty dully, and out of y^e good people's favour.

Major Gen^l *Trelawny* was made Governor in the Room of my L^d *Bathe*. the mayor put himself into y^e Interest of y^e *Earle* to facilitate his designs of getting the dominion, and Revenue of y^e town into his hand. but all was frustrat: for to oppose him who would have had m^r *Rogers* succeed him, we chose Jn^o *Munyon*. at the end of this time S^r F. Drake gott hands to a petition for y^e old chartar, sent it up, and by Interest at court got one so called out of w^{ch} the may^r was excluded.

1696-97 247. Jn^o *Munyon*.

The third time, hoping he would have prov'd what he was generally thought, viz a man of Conscience, & Love to ch. of England, but on this opportunity, he cast off y^e mask, & shewed hemselve to be all the while what he was In his youth, a *Presbyterian*. for he chose all y^e fanatiks to be freemen, he could find; even Such as were under exco^mmunication, and had no right to y^e freedom. He was accessory to the new modellin y^e benches, casting out m^r Jn^o *Trelawny*. Capt *Paige*, my selfe. R. *Berry* Capt *Rogers*, Capt *Edgecomb*, from the upper bench, putting in not only the old ones, but added 2 fanatickes, Jn^o *Warren*, & John *Neel*. who were not so much as old freemen In y^e chartar. This Lost him the Love of all churchmen, and gott him Little among ye fanaticks, for the cheat being observed, their own tooles turned tayle to them, and then he grew melancholy and distracted, for

1697-98 248. Jn^o *Warren*.

altho Jn^o *Warren* succeeded him, who was a perfect presbyterian, and went to meeting every Sunday afternoon. yet a parliament being called, mauger all their advantage and tricks, which were many; we carryed ag^t the Regulator, for M. G.

Trelawny, and S^r *Jno Rogers*, ag^t m^r *Parker*, & m^r *Calmady*, who they satt up. 190 ag^t 135. this so mortified y^e men, and broke the credit of the party, that even the Regulator, s^r *F D.* became quite confounded. and never cared to concern him selfe in town matters, in pure discontent.

this Mayor was a merchant, and thats all: of no knowledge in town affaires, or of any parts, beside trading. by w^{ch} the town suffred much, as it did by his Successor also.

1698-99 249. Jn^o Neal [Neel].

who was also a meer merchant, and from Ignorance In town usages & Justiceship, was so beweldred, that things went very uneasy, and all the care wanting that was necessary to cleanse it of dung, beggers multiplyed, and the corporation faln into y^e Lowest contempt. In this mans time four magistrates were chosen, *Joseph Webb*. *W. Davys*. *S. Allen*. & tho. *Lymber* y^e 2 latter of y^e new model, so that In the short time of their chartar four of their upper bench dyed, viz. *W. Munyon*. *W. Tom*. *W. Cotton*, & Tho. *Knotsford*. in March this yeare my brother Nath. dyed, he was a zealot In this new model, and beleive the disappointment they met, & y^e odium they contracted, helpe to bring that *Asthma* upon him of w^{ch} he dyed.

1699-700 250. Richard Opy [Opie].

This Gent. was one of the 24 or Co^mon councill in the old chartar, and left out by the E. of *Bathe* and *W. Martin* in their new one 1684. and Restored in that of s^r *F. Drake* = but he abbetted none of his Arbitrary, sinnister, whiggish designs, nor followed the stepps of his 3 last predecessors, but made free as many churchmen as he could, by w^{ch} he broke Jn^o *Warrens* ballance, so displeased s^r *F D* so that he Abdicated y^e town & came not neare in several yeares, doing us all the despight he could without Regard to his call or the Interest of his friends here, who sufferd his oppression, so much as his enemys.

this year the D of *Bolton* was treated h

The MS. has been worn away in the places where the blanks are left.

1700-1 251. Joseph Webb.

This Good man was a member In y^e 2 Last charters and continued in this. His principles were good; and he Acted accordingly, and quite broke the neck of the whigg Interest. the Parliam^t being dissolved, M. Gen^l *Trelawny* and his brother the *Brigadeer*, were both chosen, though opposed by all the power, and tricks of the dissenters, whiggs, and enemyes of the church.

1701-2 252. Will. Davys [Davies].

Was a 24. or Co^mon Council man also In the 2 Last charters, and so continued in this, though he acted on the right side like his 3 Last predecessors. this yeare the *Brigadeer* dyed, and M^r *Woolcomb* of petton succeeded: and the parliam^t being dissolved, and a new one called, the *M. Gen^l* and M^r *Woolcomb* were chosen.

March 8 this yeare viz, 170 $\frac{1}{2}$ K. *William* dyed. And *Ann* Princes of Denmark Succeeded to the crown, whom God grant Long, & Happily to Reign.

In *May* 1702. A warr was proclaimed ag^t France. I was then In London.

1702-3 253. Will. Cock.

A good church-man & a Tory. but of no parts. nor temper; he was R. *Berryes* Bro. Law, who had now screwed himself into y^e Townclarks chair, and proved as Imperious, and Arbitrary as his Master *Polexfen* had befor him. He governed this Mayor, but nothing memorable happned that yeare.

1703-4 254. Nic^o Ginnys.

A very honest, good man, some judges came to town in his time, and among them the very famous Judge *Price*, who made that noble & bold English Speech In Parliament when the *K. W* had given his Favouirit *Benting*, Earle of Portland a vast Estate in Wales. Nothing else memorable happned his yeare.

1704-5 255. Tho. Darracot.

One whom we all thought honest, but he proved a shuffler, Abetted the whiggs, encouraged s^r *F. D.* to appeare again, and on calling a new Parliamt^h he and R. *Berry* (as very a K. & *hypocrite* as could be) fell in with the wrong side, outed m^r *Wolcomb*, and endeavoured the Same with M. G. *Trelawny* but by tricks, and overbarring returned S^r G. *Bing* I dont say elected him. for had the good voices of ours, which they Refused been admitted, and their Ill ones refused, we had carryed it, but they Lived not Long to Rejoyce in their Iniquity, both dying in the next mayoralty.

1705-6 256. Jonah Lavington.

A man of principles Indifferent good, but his Interest and want of Courage made him lean much to the side of s^r *Fr. Drake* by which meanes upon the death of R *Berry* (who dyed this yeare) one that was no high flyer, but a Trimmer. great with s^r *F Drake* was made Town clark. he was a man more a Gentleman, more a Lawyer, and Less a Knave, than the other. but Read (who we would have had chosen) would have set all right, upon a good & Lasting foundation. He fayled also In electing Aldermen, Laying by m^r J *Blight* (after he had been chosen) under pretence of some defect in y^e form, & chose *Hewer & B. Berry*. this yeare dyed W. *Symonds* y^e oldest Alderman & T. *Darracot* y^e preceding Mayor neither of them any Loss to the town, otherwise than as they made way for two Scabbers to be put Into that Court. the death of *Berry* the Townclark, who had in all Stations been fatal to the town; Left room for Mr. *Pengelly* a Barrister, who by s^r *F. D.* tricks, y^e Insinuations, the cowardice & Ill principles of others, was chosen, and now s^r *F. D.* appeared among y^m on all occasions; with great vigor, & spirit.

Its remarkable that 11 Aldermen had dyed since the new Regulation by s^r *F. D.* Jn^o *Munyon*. &c viz. W^m *Symonds*. W^m *Cotton*. W^m *Tom*. Jn^o

Munyon. James Hull. Petar foot. Jn^o Warren. Tho Knotsford. W^m Munyon. Tho. Lymbeer. Tho Darra-cot, beside m^r Ph: Wilcocks who Resigned 1705. for dotage. & Poverty = and Tho: Bound who Abdi-cated 1700. because he was not chosen Mayor, as he sat, after m^r Opy. and befor m^r Webb.

1706-7 257. Sam. Allen.

The election of this man was not the Least mischieff his predecessors pusilanimity, trimming or partiality produced. he was A creature of the *Regulators* and served his Interests; and because of that had been postponed in 4 preceding elections. being an older Alderman then *W Cock*, he went constantly to church week days, so well as Sundays, but retained a tincture of his education, w^{ch} was Presbyterian. his father was mayor at the Regulation 1662. & turned out for nonconformity. Altho a close frugal man, he kept a very generous Mayoralty, few or none equaling him for Goodnes of meat & drink at his entertainments. this yeare dyed *Sam. How* a 12 Alderman & *B Bews* & *Rob. Cown* chosen in.

1707-8 258. James Cock [Cocke].

A man who from very mean beginning, became master. owner. and Merchant Adventurer. of good Natural parts. Indifferent with Respect to partyes, generally thought an honest man, though he shewd a Byas to the wrong side sometimes. In his time the Body of the famous *s^r Clowdely Shovel* was brought in here. In *Salesbury*. lodged in the Citadel, and embalmd by me: was then carryed to London, & Interred In the Abbey of *Westminster* at the Queens cost. This yeare the Parliam^t was dissolved, and we unanimously chose our Last Representatives *M. G. Trelawny* & *s^r G. Bing*. This yeare the Bishop of *Winchester* visited the town, dined with y^e Mayor. And this yeare an Act of Parliament was procured for employing and maintaining the poor, and I was chosen first Governor of it. only 2 of 52 Ballots for another.

1708-9 259. Rob. Hewer.

A zealous party-man of the Regulators side. did nothing, nor was anything done worthy of remembrance, save that the new church steeple was carried on very farr by subscription to w^{ch} I gave tenn Guineas, and promise tenn more wⁿ finished. Dr *Blackall* our new Bishop made his visitation *Aug* the 30. ag^t w^{ch} time the new Gallery for the Boys In the poors portion was built at the charge of y^e Guardians, & overseers. I was Importuned to be Governor agⁿ this year of that Hospital but refused it, being by sickness, the Loss of a dear wife, with whom I had Lived happily 38 yeares, an only grandson, & my sons wife, who all dyed this mayoralty, rendred unfit for such a care.

m^r W. *Warren* was chose Governor of the work-house.

m^r James *Bligh* chosen Alderman.

Beside wife, and children I Lost by death this yeare several deare friends.—Dr *Crymes* m^r *Bowscough*, m^r *Smith*, m^r R *Taylor*. It was my grand climactic this yeare.

Severe winter, great dearth, &c.

1709-10 260. James Bligh.

An honest good principled man. nothing of moment occurred in his time, but a visit to the Town by the L. ch. justice Parker & Bury.

1710-11 261. Will. Roche.

A man of Principles good enough, averse to the Regulator, and would have overset all that party had done, & restored the church Interest in the town: but being of a Rash and head strong temper, and with his Bro. J. Roche, having sinister aimes, they discovered their designs, rejected the advice of wiser and much honester men, and alarmed the advers party and were scandalously Baffled.

Parson Martin of the new-church quitting that Benefice, several appeared for it. but the Mayor forbore Long to elect, by w^{ch} time the Corporation were devided. and great animosity grew on that

account. at Length he prefixed a day for chosing. and then a Majority of the aldermen and comon counceal went out of the town. but he went to election being but present viz. the May. Justice Bligh. m^r Ginnys. Aldermen. Jno. Read Heal. phil. Collins. J. Webb, Jn^o Fletcher

and chose m^r Hewgo a very good man every way. and 2 justices refusing to open the chest to seale the presentation. It was forced as once befor on y^e Like occasion 1680. in m^r Simond's mayoralty: the other party put in caveat at his admission. It came to tryal befor the L^d Bishop in Exeter, and the Election voted good by y^e Jury. accordingly m^r Hewgo was Instituted and Inducted, but the generallity of the town were so averse to him, and him that by an Illegal way chose & presented him that they first turned him out of his office of Mayor by vertue of a power given in the first charter of Incorporation (a Copy of w^{ch} is in this book) and then sued him and Hewgo upon a Quare Impedit but just as it was come to the time of the Assize. the B^p of Winchester who was formirly of this diocess. and m^r Hewgos friend, advised him relinquish the Benefice upon some considerations; which he did. and doctor Monkton one of Liscard succeed him in our new church. *Roche* who was enough hated befor. now was became odious to both partys. the Torys for Losing an opportunity by his folly & madness to have undone all that S^r F D. had done to the advantage of the fanatick & whigg Interest in this town. the form of y^e process at turning out Roche. and w^e passed at Westminster on an hearing there on a Quo Warranto is in a bundle of papers.

[In the margin is written against the account of the election:] N B. Jn^o Read, an attorney and Bro. in law to Roche governed this affair alone, and by Ignorance, Trechery, &c, lost all. *Hewgo* was forced to quit and Roche to endure the Infamy and Reproach (on Record at Westminster and Plim^o) of

having been guilty of such enormitys as forfeited his office—never done befor by 260 y^t preceded him in it.

“R. Opie succeeded Roche; but though ejected, Roche kept the maces during the remainder of his term of office, and used to put them out of his window on Sunday while Opie was going to church.”—HARRIS'S MSS.

1711-12 262. Rob. Cown.

Was chosen the usual day. A tool, & a fool, dyed soon after, and was succeed by B. Berry, who served the rest of the yeare: and having no house in town, lodged and kept the Mayoralty at an house that was comon for quarting strangers, and selling punch, Ale. to the great scandal of the office, but they stuck at nothing, seemed to regard neither the credit. or welfare of the town, filled up y^e benches with men that were of mean scandalous—as if they had been sworn to chose the worst—and did many things contrary to the constitution, and custom of the Burrough, chose a mayor that did not Inhabit, filled the Benches with Lawyers, accepted y^e Resignation of Webb a Justice, see Lo^l Reporte.

1712-13 263. And. Philips.

An Attorney, in whose time nothing memorable hapned. but the B. of Winchester coming to toun, & being entertained by the Corporation. this yeare W. Davys, and R. Opy dyed. Jo Webb Abdicated, and the whigg Interest advanced.

1713-14 264. W^m Hurrill.

A man honest, more sense than many, much on the whigg side: made no figure.

Aug 1. our gracious *Queen Ann* dyed, & King George proclaimed the thursday following in this town, and the whole Kingdom quietly submitted, not one man appearing for the pretender. Altho the whiggs had long Reported he lay ready with an Army & fleet, &c.

1714-15 265. [John] Pike.

[Here the record ends, but there is written on a loose piece of paper pinned in:] m^r Pike A Joy Jn Beer, men whose characters I forbear for the credit of the chair which was not In 20 mayors

y^t I remember filled with worse. 1 was the most scandalous and the other 2 the most ignorant.

Sir F. D. dyed a Lingering & tormenting death.
I wish he be not punished worse in y^e other life.

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|---------------------------------|---------------------------------|
| 1715-16 John Crabb. | 1751-52 Robert Triggs. |
| 1716-17 Abraham Joy. | 1752-53 John Drake died ; |
| 1717-18 John Beere died ; | Michael Nicholls. |
| Robert Hewer. | 1753-54 John Morshead. |
| 1718-19 Edward Deeble. | 1754-55 Jacob Austen. |
| 1719-20 William Bartlett. | 1755-56 Thomas Bewes. |
| 1720-21 George Ridout. | 1756-57 John Forest. |
| 1721-22 John Fletcher died ; | 1757-58 Antony Porter. |
| John Elford. | 1758-59 John Facey. |
| 1722-23 Sir John Rogers. | 1759-60 James Richardson. |
| 1723-24 Andrew Phillips. | 1760-61 Robert Phillips. |
| 1724-25 John Crabb. | 1761-62 Michael Nicolls. |
| 1725-26 Samuel Brent. | 1762-63 John Morshead. |
| 1726-27 Benjamin Berry. | 1763-64 Jacob Austen. |
| 1727-28 Edward Deeble. | 1764-65 Thomas Bewes. |
| 1728-29 John Rogers. | 1765-66 John Nicolls. |
| 1729-30 Samuel Allen died ; | 1766-67 William Davis Phillips. |
| William Cock. | 1767-68 Richard Beach. |
| 1730-31 John Tapson. | 1768-69 Henry Tolcher. |
| 1731-32 John Waddon. | 1769-70 Samuel Peters. |
| 1732-33 Robert Hewer. | 1770-71 Joseph Tolcher. |
| 1733-34 John Hellier. | 1771-72 Diggory Tonkin. |
| 1734-35 Thomas Phillips. | 1772-73 Joseph Brent. |
| 1735-36 William Strong died ; | 1773-74 Robert Fanshawe. |
| Robert Hewer. | 1774-75 Sir F. L. Rogers. |
| 1736-37 John Veale. | 1775-76 Ralph Mitchell. |
| 1737-38 Greenhill Darracott. | 1776-77 Henry Tolcher, junr. |
| 1738-39 Henry Tolcher. | 1777-78 Samuel White. |
| 1739-40 Edward Deeble. | 1778-79 Joseph Freeman. |
| 1740-41 John Waddon. | 1779-80 Thos. Blyth Derricott. |
| 1741-42 Richard Gortley died ; | 1780-81 Jacob Shaw. |
| Sir J. Rogers. | 1781-82 Joseph Austen. |
| 1742-43 Launcelot Robinson. | 1782-83 George Marshall. |
| 1743-44 John Rogers. | 1783-84 John Arthur. |
| 1744-45 Edward Hoblyn. | 1784-85 John Nicolls. |
| 1745-46 William Martyn, M.D. | 1785-86 Joseph Tolcher. |
| 1746-47 William Davis Phillips. | 1786-87 Diggory Tonkin. |
| 1747-48 Michael Nicholls. | 1787-88 Robert Fanshawe. |
| 1748-49 John Ellery. | 1788-89 Peter Tonkin. |
| 1749-50 John Facey. | 1789-90 John Cooban. |
| 1750-51 James Richardson. | 1790-91 Stephen Hammick. |
| | 1791-92 George Winne. |

- | | |
|-------------------------------|-----------------------------------|
| 1792-93 William Crees. | 1831-32 Aaron Tozer, Capt. |
| 1793-94 Andrew Hill. | 1132-33 George Coryndon. |
| 1794-95 William Symons. | 1833-34 William Hole Evens. |
| 1795-96 Robert Fuge. | 1834-35 John Moore. |
| 1796-97 Richard Burdwood. | 1836 Thomas Gill.* |
| 1797-98 Peter Tonkin. | 1836-37 James King. |
| 1798-99 Bartholomew Dun- | 1837-38 William Hole Evens. |
| sterville. | 1838-39 George William Soltau. |
| '99-1800 John Arthur. | 1839-40 Joseph Collier Cook- |
| 1800- 1 Philip Langmead. | worthy, M.D. |
| 1801- 2 Thomas Cleather. | 1840-41 Ditto. |
| 1802- 3 John Clark Langmead | 1841-42 George W. Soltau. |
| 1803- 4 Edmund Lockyer. | 1842-43 William Prance. |
| 1804- 5 James Elliott. | 1843-44 Nicholas Lockyer. |
| 1805- 6 John Hawker. | 1844-45 Philip Edward Lyne. |
| 1806- 7 Thomas Lockyer. | 1845-46 Benjamin Parham. |
| 1807- 8 Thomas Eales. | 1846-47 Thomas Hillersden Bulteel |
| 1808- 9 William Langmead. | 1847-48 James Moore. |
| 1809-10 Joseph Pridham. | 1848-49 William Burnell. |
| 1810-11 Edmund Lockyer. | 1849-50 John Moore. |
| 1811-12 George Bellamy, M.D. | 1850-51 David Derry. |
| 1812-13 John Arthur. | 1851-52 Alfred Rooker. |
| 1813-14 Henry Woollcombe. | 1852-53 Herbert Mends Gibson. |
| 1814-15 Sir Diggory Forest. | 1853-54 Copplestone Lopes Rad- |
| 1815-16 William Lockyer. | 1854-55 Thomas Stevens. [cliffe. |
| 1816-17 Samuel Pym, Capt. | 1855-56 John Kelly. |
| 1817-18 Thomas Miller. | 1856-57 Francis Freke Bulteel. |
| 1818-19 Richard Arthur, Capt. | 1857-58 Richard Hicks. |
| 1819-20 George Eastlake, jun. | 1858-59 James Skardon. |
| 1820-21 Richard Jago Squire. | 1659-60 John Burnell. |
| 1821-22 Edmund Lockyer. | 1660-61 William Luscombe. |
| 1822-23 William Adams Wels- | 1861-62 William Derry. |
| ford. | 1862-63 Ditto. |
| 1823-24 Nicholas Lockyer, | 1163-64 Charles Norrington. |
| Capt. | 1864-65 Ditto. |
| 1824-25 Edmund Lockyer. | 1865-66 Francis Hicks. |
| 1825-26 William Henry Haw- | 1866-67 William Radford. |
| ker. | 1867-68 Ditto. |
| 1826-27 Richard Arthur, Capt. | 1868-69 Alexander Hubbard. |
| 1827-28 Richard Pridham, | 1869-70 William Luscombe. |
| Capt. | 1870-71 Robert Coad Serpell. |
| 1828-29 Richard Freeman, M.D. | 1871-72 Isaac Latimer. |
| 1829-30 William Furlong | 1872-73 John Kelly. |
| Wise, Capt. | 1873-74 Alfred Rooker. |
| 1830-31 Nicholas Lockyer, | 1874-75 William Foster Moore. |
| Capt. | 1875-76 Ditto. |

* First mayor under Reform Act, Mr. John Moore holding office until the end of 1835.

Here follow copies of the act dividing St. Andrew and Charles parishes (1640), and of the decree of the Star Chamber (May 10, 1637) in the suit between Dr. Wilson and the Corporation.

A list of the government of Plim^o Dissolved In May 1684 by surrender.

W^m Martin. May^r Peter foot. W^m Jennens. Jn^o Martin. W^m Symons. Daniell Barker. W^m Cotton. Jn^o Dell. Andrew Horsman. W^m Tom. Jn^o Munyon. James Hull. wanting one of the due n^o. Gregory Martin. Richard Cowes. Phillip Wilcock. Tho: Knotsford. Michael Hooke. Stephen Ackerman. Waker. Sam^l Heynes. Richard Opie. Jn^o Allen. W^m Munyon. Rich. Hingston. James Yonge. Tho Bound. George Orchard. Joseph Webb. Robert Berry. Andrew. Mathew, Jn^o Rogers. W^m Davye. wanting. 4 of the due number.

the Corporation being dissolved May 1684 by the surrender of o^r chartars, priviledges Franchises. &c. His M^{ty} Abridged the Governm^t, appointing but 12 Comon Counsil.

A list of the New Government, Establisht June. 1684 by the new chartar.

s^r Hugh Piper, k^t L^t Governor of y^e Castle. Jn^o Martin, Esq. Izaack Tillar, Merchant. Sam^l Maddock, Merchant. Jn^o Trelawny of Ham. Esq. W^m Martin, to Continue May^r y^e Residue of y^e yeare. Tho. Stutt. Merchant. W^m Symons, Gentleman. Philip. Andrews, Merchant. Jn^o Dell, Merchant. Jn^o Munyon, Merchant. James Hull, Merchant. Lewis Stukely, esq^r

Jn^o Paige Gent. Phillip Wilcocks, Merch^t Stephen Ackerman. Timo. Hamlyn. Collector Customs. James Yonge. chirurg^o Hospitall. Rob. Berry, Attorney George Orchard, Merch^t Jno Rogers, Merch^t afterwards s^r J. R. Andrew Mathews, Apothacary. Nic^o Edgeumb. Brewer. Walter Ingram, Mercer. Joseph Webb, Grocer.

A TABLE, or direction of the Election. and Swearing of y^e Mayor of the Burrough of Plim^o and of other business of Importance within y^e s^d Burr^o

Sept^r

IMPRIMIS, the sunday befor *Lamberts* day, y^e parish clarks are to publish in the respective churches y^e day of the Election of the

Mayor & in y^e Mayor's name, to require all freemen to be then present at nine of y^e clock in the morning.

2. On s^t Lamberts day, being the 17th Sep^r all the freemen are first to be called, & yⁿ our Mayor is chosen, by 36. persons sworn for that purpose, or the major part of y^m viz. all y^e 24^{tye} and y^e residue of y^e number to be chosen of y^e comons, and nothing else done that day—and those 36 are to be chosen, by 4. viz. two of y^e Bench, to be nominated by m^r Mayor, and two others of the 24^{tie} to be nominated by the major part of the comons, and they 4 to be sworn to elect 36 persons, y^t shall choose y^e Mayor.*

3. On Michaelmas day the Mayor is sworn, and yⁿ taketh his place of Mayor. and not befor, at w^{ch} tyme y^e Receiver taketh his oath, and the serjeant yeild up their maces, to y^e Mayor. and yⁿ they or others are by y^e Mayor chosen, and sworn and their maces delivered y^m

4. Immediatly aftar y^e Mayor is sworn, a Rentall is to be made containing all Conventiary rents, high rents and rents due for theyre privat Cocks, of watar in their severall houses, as also the allowancis w^{ch} are given and allowed, are in y^t book to be Inserted. w^{ch} is to be delivered to such new collectors thereof, as it shall please y^e Mayor to appoint, viz. two of 24^{tie} and also one other Rentall to be made, of the freedome rents, viz 6d of every freeman, w^{ch} is likewise to be delivered to such collectors as it shall please y^e Mayor to choose viz. two of y^e pewneys freemen.

5. the 30th of *September* m^r *whites* Audit is kept, and tenn bonds received for the assuring of 250£ given by him, and a warrant 5 dayes befor to be signed, by the Mayor and Justice and directed to y^e Sarjeants, for the warning of all such as are borrowers of s^d mony, to be then there.

Octb^r

6. That y^e next Law-court: w^{ch} is y^e munday next after *Michaelmas* day, y^e Mayor doth sweare such Constables, as he thinketh are fitting newly to be chosen. and he (sweareth) sealeth, the

* Those who chose the jury were called alfurers; and this singular style of election was current for some three centuries. A contest arising at the mayor choosing in 1802, the validity of such mode of proceeding was brought to trial before Mr. Baron Thompson, at the Exeter Lent Assizes, in 1803. It was then declared to be an infringement upon the rights of the commonalty, and therefore illegal, and the elective franchise was restored to the freemen at large. This memorable victory of the freemen over the old corporation is commemorated by a gold medal suspended to the mayor's chain of office.

Leather sealers, water bayliff, escheators, clerks of the market, and Gaigers;

7. The same week if he may, or the week following at Farthest, he taketh Recognizance of Tiplers, but 3 dayes befor that, y^e May^r graunteth his warrants to y^e Constables, to warn y^e Tiplers to be at the Hall at a day certainly mentioned in y^e warrants for y^t purpose. this was y^e tyme we did use to take Recognizances of Tiplers, but now they are required to be taken in Aprill or May.

8. The 19th the Affurors for Affuring y^e presentments are sworn, viz. 2 of the Bench, and two of y^e 24^{tie} all to be nominated by the Mayor. After they have affured the presentments, forthwith the Estreators are to be drawn. up, and directed to the sarjeants, under y^e town Clerks hand and seal to be collected and a warrant under y^e town clerks hand and seal fixed to y^e Estreats. and directed to y^e Sarjeants for Collecting thereof.

9. The court following being y^e 26 of October y^e Auditors for y^e town are sworn likewise nominated by the Mayor, they are to be 2 of the Bench, and two of y^e 24^{tie} but note y^t 2 of the puny Auditors last yeare, viz one of y^e Bench and y^e other of the 24^{tie} do stand as Auditors for y^e yeare following, and 2 onely are Elected and sworn.*

10. On the 16th y^e May^r and Magistrates, are to meet at the Guildhall, by 3 of the clock in y^e afternoon, about perfecting y^e accompt of s^r Jn^o *Gayer* m^r *Burroughs*, & m^r *Kings* Gifts, to y^e poore where they are to have wine & cakes.

Nov^r 11. The Tuesday next after Alholland day, there is a warrant graunted, and Signed, by y^e Auditors, directed to y^e Serjeants y^t they personally appeare befor y^m at y^e Guildhall by nine of the clock, y^e same day, and to warn all Such persons whose names are written under y^e warrant. to bring y^t day all such moneyes, as they and every of y^m are and ought. to yeild an Accompt for, to y^e sayd Auditors of y^e s^d Burrough Lawfully deputed to y^t purpose.

* It appears to be quite clear, from the manner in which entries concerning the auditorship and other matters are made in the books, that the affairs of the borough had been conducted according to this table in all essential particulars, at least from early in the 16th century. The bye-law regulating the form of electing the mayor in the Black Book is undated, but it is possibly of the 15th century, certainly not later than the reign of Henry VIII. The Act Charter left these matters very much to the discretion of the corporators. It does not even mention the twelve and twenty-four.

Decemb^r 12. The 3^d of December, there are a paire of Indentures to be written between y^e Mayor and Burgesses of this town. of Plym^o of y^e one part. and the Sheriff of y^e County of Devon of y^e other part, testifying y^e names of y^e freemen of this town y^t are not to be Impannell'd on Juryes, at y^e Assizes or Sessions, one part thereof, is to be signed and sealed by y^e May^r w^{ch} y^e sheriff, is to keep, y^e other part is to be sealed by y^e sheriff. w^{ch} y^e Town Clark is to keep.

13. The 11th Dec^r y^e Almeshouse accompt is to be written, & likewise a note to be written and delivered to y^e clark of y^e parish to be published y^e sunday following, expressing y^e names of y^e Almes house wardens, for y^e yeare to come, & y^t y^e old wardens are to yield up theire Accompt y^e 19th of dec^r y^e next following.

Feb^r 14. The 19th of february. m^r Mayor graunteth his warrant to y^e Constables, to warn y^e Butchers to be at y^e Guildhall y^e next day following, to enter into recognizances not to kill flesh during Lent.

15. The 24th day of february, there are 4 warrants written to be directed to y^e Constables, for y^e warning all Inholders to give Recognizance. to wit 10£ the party principle, and the 2 surtyes each of y^m 5 pounds. not to kill dress or eat any flesh in theire houses during Lent.

16. A moneth befor Eastar. y^e booke of y^e clarks wages. and y^e Quartar pence is to be written. and collectors to be nominated by y^e Mayor, every Inhabitant to pay 8^d a peece. & y^e widdows to pay 4^d and on litle Eastar sunday, or y^e Sunday next following y^e clark is to publish in y^e church, y^t y^e churchwardens are to give up theire accompts, in y^e church some certain day y^e week following, as y^e May^r shall appoint.

March. 17. In Eastar week, or within one moneth after, 2 surveyors for y^e Highways are to be chosen, by y^e Constables and churchwardens for y^e yeare following, & on litle Eastar day there is a sumons to be read, for y^e Amending of y^e highwayes, & who are nominated to be overseers of y^e work. & y^e days & place of meeting.

18. In Eastar week, or one moneth after, y^e overseers of the poor of each parish, are to be nominated by warrants to be signed, and sealed by y^e May^r & Justice for y^e yeare following, and y^e clarks are to publish y^e same, in each church y^e sunday, who are y^e overseers. & y^t y^e church wardens are to give up theire accompts, some day

y^e week following w^{ch} co^monly is fryday, by one of y^e clock in y^e afternoon at y^e church.

May. 19. On y^e 7th of May, or y^e fryday next aftar, y^e church accompts, y^e collectors, overseeres of y^e poor, are to give up theire accompts in y^e church. w^{ch} accompt co^monly Lastath 2 dayes. & this is also to be published in y^e church by y^e clarks y^e sunday befor.

June. 20. The 11th day of June, y^e bookes for y^e releif of y^e poore, are to be written viz. one for every ward, and to be forth-with ratad by two of ye Bench, and 2 of y^e 24^{tie} such as y^e Mayor shall nominate and appoint. & yⁿ to be delivered to y^e Mayor. and he with y^e Justice are to subscribe theire names to y^e s^d bookes.

21. On y^e 28th of June y^e accompts for Releiff of y^e poor are to be made up, when are present, y^e mayor & y^e rest of y^e magistrates.

Here follows "a schedule of the heads of the Alterations, and Aditions to be made in the Chartar of Plym^o 1684," and the order of the king for its preparation accordingly.

The chief provisions were: Private council of the town to consist of thirteen aldermen, whereof the mayor was to be one; the common council, of the mayor and aldermen and twelve assistants; all in the first place to be nominated in the charter, and thereafter to be elected by the mayor and aldermen, or major part of them, who were likewise to have the power of making burgesses and inferior officers as before. Town to have a recorder, town clerk, and coroner. Mayor and recorder to have power of making deputies; and the deputy-recorder to be town clerk and justice of the peace. Recorder to be nominated in the new charter; thereafter, with the coroner, to be chosen by the common council. Mayor to be elected by the freemen of one of two aldermen put in nomination by the mayor and aldermen; but no alderman to be put upon election who had filled the office within eight years, unless absolute necessity required, and he consented. Fines for refusing office—mayor £200, aldermen £100, assistants £50, all not exceeding. Mayor, recorder, and deputy-recorder to be justices of the peace of the Quorum. Present mayor, with two first nominated aldermen, to be justices until death or removal: thereafter precedent mayor to be justice during year ensuing his mayoralty; and the two aldermen eldest nominated or elected justices.

This was the only charter that made any material alteration in the government of the town. Charters subsequent to that of Henry VI.—and the town had them from Henry VII., Henry VIII., Edward VI., Mary, Elizabeth, James I., and Charles I.—merely confirmed former privileges, or modified and extended the judicial powers of the corporation, in the appointment of justices and giving authority to the local courts. Charles II. placed the corporation on a new footing; but William III., by the last charter which the town has received, practically restored the old regime.

A TABLE, of the dayes, wherein the Aldermen are to weare Scarlet. the Assistants theire gowns. as also when y^e Mayors Feasts. and other Treatments are within this Burrough.

(1) First Tuesday befor *Lamberts* day, scarlet, y^e new Mayor then being Elected. the old Mayor holds a feast.

(2) Some day between that and Michaelmas, y^e two mayors agree on a day w^{ch} is Called Freedom Day, on w^{ch} the boyes have liberty to take w^t they meet y^t is eatable, and in a body they go round y^e boundaryes of the town, y^e Mayor also. with many other Inhabitants, riding the freedom, meet at freedom feild, where Beer wyne, Apples, cakes, &c. are distributed. thence meeting y^e boyes who land from catdown at y^e Barbican, they go to y^e old *Mayors* where y^e Rable are entertained with cakes and aples, thrown out of a window into the Street. and the considerable Inhabitants with wine. and bunnns In y^e house. thence going to y^e new Mayors they are all likewise treated. and soe depart.

(3) Michaelmas day, y^e Mayor and Aldermen In scarlet. & the 12 In theyre coñon Gowns, go in a body to church after sermon, goe to y^e Guildhall, where y^e new Mayor Is sworn. thence they go to church. where after y^e prayer for y^e church militant. & a psalm sung y^e parson makes a speech to y^e Mayor. yⁿ gives y^e blessing. when in very solemn manner y^e Mayor Is conducted home, y^e Constables with theyre maces, y^e waytes y^e Town standard born before him, with drumms. Trumpets &c. where all are entertained with wine and cakes, and depart, then after an houre, y^e May^r Magistrats Assistants. Country gentlemen. officers of y^e Garrison. & principal Inhabitants are treated at a dinner by y^e Mayor, in his house. If this happen on a Sunday, y^e dinner is sav'd, but y^e scarlet must be worn all day.

(4) The first tuesday in October, y^e sessions feast is kept at y^e Mayrs the day preceeding all beginn session in theyre gounes.

(5) 5th Nov^r Scarlet befor noon, with wine & cakes afternoon, but if Sunday Scarlet all day.

(6) X^{tnas} day Scarlet all day.

(7) S^t Stephens day Scarlet befor noon, If Sunday Scarlet all day.

(8) first Sunday In January Scarlet.

(9) Eastar day, Scarlet.

(10) May day Scarlet, If y^e Mayor pleases.

(11) White-Sunday, Scarlet.

(12) 23. Aprill Coronation, Scarlet.

(13) 29. May, his M^{ys} birth, & return. Scarlet. bunn, & wine.

(14) Sunday befor 25th July, Scarlet, wine. & cakes, being the day y^e Spanish Armada, 1588, were seen on this coast.

(15) Munday after Michaelmas is Law court, Munday aftar twelfth day is Sessions.

(16) The Munday after Easter week is Law court, & y^e munday next after *Tho. Becket's* day is Sessions.

All those dayes y^e Serjeants are to give warning to y^e Aldermen, and Assistants.

The gowns of the twenty-four as described by one of the train of Cosmo de Medici, who visited Plymouth in 1669, reached to the ground, and were of black cloth, richly ornamented with strips of black velvet, and a black square collar lined with fur.

The oaths of the mayor and other officers of the borough follow, as may be seen in the Black and White Books, with the freemen's oath of 1684. This differs in some material particulars from the old oath already given. For the words "and as far forth as you can you shall save this Burrough harmless ag^t y^e King and all his Leige people," the words "you shall save this burrough harmless as farr as Lawfully you may" are substituted. The passage, "whereby any Custom or duty may be lost or withdrawn from y^e Mayor and commons," is altered by the insertion of the words "from the king and" before "y^e Mayor." And before the words "and you shall pay yearly for your freedom" there is inserted the significant clause, "& you shall from time to time give notice to y^e Mayor of this Burrough for y^e time being, of all conventicles or unlawfull Assemblies y^t you shall know to be within this Burrough."

There were only two classes of freemen of right—the apprentices of freemen and the eldest sons of freemen after the father's death; and in 1730 a special order was passed confirming their rights, in order to put an end to disputes which had existed. At the same time it was agreed that only persons of considerable rank and distinction, and nobody under the degree of a gentleman, outside the borough should be made free under the third class—that of honorary freemen. It was also decided that if a freeman under the degree of a gentleman left the town for two years, he could be disfranchised. Moreover it was declared that the sole right of electing capital burgesses was in the mayor and the capital burgesses. Occasionally the freedom was sold. This was the case immediately before the Reform Act of 1832, the price being £25, but the new freemen were not of sufficient standing to preserve their rights under that measure. The apprenticeship freedom was eventually curtailed to a freeman's first apprentice. Harris, in his MS. "Vestiges," states that a freeman was made annually by each mayor on retiring from office; and that for some little while the mayoress was "allowed to make her favourite," if any.

Next follows a copy of the Act Charter. "Note that this was transcribed out of the book of oaths and is y^e first thing in it." Yonge explains that he was not certain of the meaning of some of the abbreviations, the document being written in an old character, and that he had "drawn a line under such words as were not easily Intelligible, & written y^m exact wth y^e Copy."

Then we have "a true and exact Copy of y^e Original Constitutions of the Hospital of *Orphans Aid* In Plimouth w^{ch} lyeth In the chest of that house now In the council chamber of the Guildhall of Plim^o and from it taken with mine own hand this 16 of May 1695 James Yonge May^r."

The Devisions, or Wards of Plimmouth as made In Sessions 1686, and appointed to each alderman 1694 by J Y [onge].*

m ^r J ^s Blyth.	James <i>Yonge</i> Mayor, his devision is from
B. Sampson.	his own house on the New Key [Parade] to
Jn ^o Murch.	the gates, up the Market street [High Street],
	down by the popes head, Into the Lane of
	Pomoryes Condute [Batter Street] and down
	back to his own house, all on the Right hand,
	the Lanes Included.

m ^r N. Ginnyes	m ^r Justice <i>Wilcocks</i> ; his devision is on the
Ja ^s Tregellas	Right hand down the broad street [Buckwell
	Street, and upper part of Bilbury Street], then
	from y ^e Lower end of 3 cranes street [Tin
	Street] to y ^e uper end of the same: Lanes
	included.

* It will be seen here that the town was divided into as many districts as there were aldermen, for the purposes of order and cleanliness. But these divisions were not wards in the modern sense. From the time of its formal incorporation until the Municipal Reform Act, Plymouth had four wards proper, which by Leland are called Old Town, Venar, Lower, and Ventre, the latter "along by the gulph." But Lower should be Loo Street. Subsequently they were named Old Town, High Vintre, Lower Vintre, and Looe Street. Now there are six wards—St. Andrew, Charles, Drake, Sutton, Vintry, and Frankfort. The name Venar ward still exists for the purpose of the land tax assessment, wherein Old Town is divided into first and second. Originally the wards were set out for the better order and defence of the town, and had nothing to do with the choice of representatives as now. In 1750 the wards set out in the poor rate assessment were: Lower Vintry, Venners, Market Street, Old Conduit, Middle part of Old Town, Higher Vintry, Beginning of Old Town, Charles Part of Old Town, Part Vintry, Part Upper Loo Street, Lower part ditto, Upper part ditto, and Out-bounds for both parishes.

m^r W. Cock
Jn^o Glanvil

m^r Jo^s *Martyns* deviation, is from the corner of the upper end of broad street, through the market street [Whimble Street] to the church Style; thence In to the old town, down Butchers Lane [Treville Street] & up the broad street on the Right hand, Lanes included.

m^r Walter Ingram
Jn^o Stephens.

Alderman *Symonds*, is from old town gate to Butchers Lane, and down that lane to y^e South entrance of the new church yard thence up by m^r Sherill, behind the new church, and Round to old town gate again, all on the Left hand, Lanes included.

m^r Tho. Burgoyne
Richard Glanvil
Jn^o Fletcher

m^r Justice *Trelawny*. is from the new key at y^e Corner ag^t my house, up that Street, to the three cranes Street and down to dung key on the Right hand, thence to foxhole [Vauxhall], and to y^e Custom house on both hands, and over the new key to the aforesayd corner, Lanes included.

m^r W. Davy
Tho: Treby

Alderman *Dell's* deviation is from Pinns Corner up that Lane, on the Right hand, thence to the great Hoe gate, and the end of that Lane, thence to the Queens Armes [in Notte Street] and by the Grates over the new key, through the three post lane to pinns corner again, all on the Right hand, Lanes Included.

m^r N. Yonge.
Ja^s Moreton.

Alderman Jn^o *Munyon's* deviation is from his house at the Lower end of Pinns Lane to the Barbican on both sides, thence behind the Iland house on the Right hand of the street to the uper end of pinns Lane, down that Lane to his house again, all on the Right hand, Lanes Included.

m^r N^s Carkeet
Jn^o Gayell

Alderman *Hulls* deviation is from the south entrance to the new churchyard from broad street thence by the Alms houses to Gascoyne Gate, and thence to the great tree, thence through Martyns Gate to the Sayd South entrance where it begins. all on y^e Right hand,

Lanes Included. also the houses on the Left hand from the great tree to dung key, Lanes Included.

James Stephens.

Alderman *Paiges* deviation is from Frankfort Gate to old town gate, through the Shambles [in Old Town] and back to Frankfort gate, all on the Right hand, the houses without old town gate on the Left hand of Tavistoke Road. and those In *Stonehouse* Lane and all other Lanes Included.

Daniel Cory

Alderman *Berry's* deviation, is from Frankfort Gate through the Pigg Market [Bedford Street], down s^t Andrew Street, and up the Broad Hoe Lane [Hoe Gate Street], thence to the old mills [Millbay], and back to Frankfort Gate, all on the Right hand: Lanes Included.

m^r Jn^o Rogers.

tho. Bogar

Jn^o Harris

deviation begins at y^e Corner ag^t broad church stile down the Market street [this also included Whimple Street] to the Queens Armes, thence through s^t *Andrew* Street to the sayd Corner, where It began, all on the Right hand. Lanes Included.

Cap^t edgcomb.

R Hewer

Leonard Kent

m^r Jos. Webb

W^m Martyn

deviation begins at y^e Barbican takes In all the houses on the Left hand to broad Ho-gate.

devision, are all the houses without the way on the Right hand from the Slipp by the great tree [Briton Side] to Gascoyne gate Including Lypson, Tothill, Catdown, Cockside, fryery, &c.

N.B. there were then 3 Aldermans places vacant. In all 13 deviations.

Concering chosing Parliamentmen.

Plimmouth is a Burrough by presription & sent to Parliament two Burgesses time out of mind, befor it was Incorporated, w^{ch} Burgesses were yⁿ chosen by freeholders only.

When, or by what meanes the Mayor, & Bench gott the power of chosing by themselves only, I cannot learn: but they had it ever since *Q. Elisab.* time, how Long befor I know not, but its

said the people to be eased from the cost of paying the Burgesses Left the Corporation to chose them on condition they payd y^m out of y^e town Stock.

When the Healing Parliament was chosen 1659 60 w^{ch} Restored *K. Charles 11*, the freemen and freeholders headed by m^r Jonathan *Spark*, *W. Jennens* &c met under the Guild-hall at the same time y^e Mayor and his Brethern mett in it, and claimd the Right of voting, w^{ch} being denyed they chose *W^m Morris* esq^r then Governor of the Fort by comission from *G. Monk*, afterwards made a Baronet, & secretary of State, and *Samuel Trelawny* of Ham esq^r — the Mayor &c chose Sarjeant *Maynard* their Recorder & Ed. *Fowel* esq^r their Town-clark, who being Returned by the Mayor, were sitting members until the gentlemen chosen by y^e freemen & *freeholders*, having petitioned the House of Comons were declared Rightly elected, & placed in the House.

Upon the death of s^r *W Morrice*. 1676. m^r Jn^o *Spark* & m^r *W. Jennens* became Rivals for y^e place. & at the Election a Pole was demanded, the Mayor called the freemen first, and m^r *Jennens* wⁿ they were poled gave up without poling y^e freeholders this made them clamorous; and when m^r *Spark* went to Parliament he to secure the Rights of the freeholders, inquired Into the proceeding of the comitte and H. Comons on y^e controversy abovesayd & found in their Journals w^t followes.

The report of the committee, brought up by Mr. Turner June 9, 1660, stated that "the Mayor and comonalty" had right of election, and not "the Mayor twelve Aldermen and twenty four burgesses." Mr. Henry Woolcombe notes in the margin: "This s^d seem to determine, *only* that the Mayor Aldermen & 24 Burgesses have not any exclusive right of election, and not to exclude the Freeholders, since the question is not between the Freeholders and the Mayor and Commonalty."

Notwithstanding that Resolve, the freeholders were allowed their votes on the next election of y^t parleament, called k.ch.11. *Long Parliament*, w^{ch} began soon after this debate: so they did also 16[66] wⁿ on the death of m^r *S. Trelawny*, s^r *Gilbert Talbot* was chosen, and so they did In chosing m^r *Spark* the Last time, and In chosing s^r Jn^o *Maynard*, & s^r *W^m* two parliament following. viz, the two Last parliaments of *K Charles* the second. But In *K. James's* time; *W Martin* Arbitrarily chosen by the Mayor, and two Benches, & returned y^e Lord *Ranelagh*. and m^r *B. Granvill*: but on y^e Revolution my Lord *Torington* then Admiral *Herbert*,

being Admiral of the Dutch fleet then in this port, w^{ch} brought hither the P. of *Orange*, was chosen promisuosly with S^r Jn^o *Maynard* by the freemen & freeholders, and on the preferment of *Herbert* to y^e Lords house m^r Jn^o *Granville* son to y^e E of *Bathe* & m^r Martyn *Rider* strove for It, and on a pole of freemen & freeholders, this Returne was given m^r *Granville* by m^r W *Symons* the Mayor. *Rider* petitioned against it, and on an hearing m^r *Cotton* an old member being witnes for m^r *Rider* accidentally declaring that y^e town was a Burrough, and Elected by freeholders befor the Incorporation of it; the comitte awarded that they were the true views, & m^r *Granvill* having the majority of them, was duly Elected; no Record of this was made In y^e Journal only in General terms, that m^r *Granville* was duly elected. Upon the death of s^r Jn^o *Maynard* in m^r *Paige's* mayoralty; m^r Jn^o *Trelawny*. & m^r Josiah *Calmady* were Rivals for the place: freemen, & freeholders were polled, & the choice fell on m^r *Trelawny*, that Parliamt^t being dissolved, In R *Berrys* mayoralty, the election was made, and a pole taken of freeholders, as well as freemen, who chose m^r Jn^o *Granville*, & m^r George *Parker*, and y^e Return made, and signed by several free holders, as well as the Mayor, &c. one of w^{ch} was m^r Jn^o *Warren*, merchant, who was only a freeholder, but 1694. Another chartar being gott, and he though a Presbyterian, made an Alderman and 1697 Mayor. did July 30 1698, the parliamt^t being dissolved choose Mayor Genl *Trelawny*, Governor of the Cittadel, & Cap^t Jn^o *Rogers*, by a vote of freemen, and freeholders, but made his Return by, and In the name of y^e Mayor & comonalty only, & left out the freeholders, the reason, & design of it being justly supposed to be, that ag^t next Election they of the Chamber, might make freemen enough of such as they would be sure would chose as they should be Instructed, for advantage of y^e good old cause, and ruin of the church of England, w^{ch} God preserve from such Designes. written Aug^t 25 1698. J. Y[onge].

NB [in margin] Alle Elections since have been by Freemen & Freeholders & y^e Freeholders right not so much as questioned.

A copy of the Water Act of Elizabeth follows, with the note that the work was performed by Drake to his "great Honor and the Inexpressible benefit of this town and Haven: by it publick, and privat Conduits are supplied, the Cannals of y^e Street filld & cleansed, the Mills (which yeild great Rent) driven, and y^e adjacent Lands watered, and without w^{ch} Plim^o had never grown to that bignes Its now of."

A list of y^e Aldermen, & Assistants wⁿ S^r F Drake Reguled y^m

Aldermen—Jn^o Trelawny. W^m Simons. Jn^o Munyon. James Hull, Philip Wilcock. Jn^o Paige. James Yonge. Rob. Berry. may^r Jn^o Rogers. Nic^o Edgeumb. Will. Munyon. Tho. Bound. Assistants—Joseph Webb. W^m Davyes, Jn^o Carkeet. W Cock. Nath. Yonge. Nich Ginnys. Tho. Burgoin. James Bligh, Tho. Darracott, W^m Lovell. Ben. Berry. W^m Wyat.

The Regulators Mayor, Magistrates & 24 men.

[Aldermen—] W^m Symons. W^m Cotton. W^m Toms. Jn^o Munyon. James Hull. Philip Wilcock. Jn^o Warren. Jn^o Neal. Tho. Knotsford. Rich: Opye. Wⁿ Munyon. Tho. Bound. Peter Fooot, the sixth in number omitted between *J Hull* & *P Wilcock*. [Twenty-four—] Joseph Webb. W^m Davys. Sam. Allen. Nath. Yonge. Tho Lymbeer. W^m Cock. Nic. Ginnyes. Tho: Darracott. James Cock. Jonah Lavington. Sam. Harris. Sam. How. Rob. Wilcocks. Rob. Hewer, who was between Jonah Lavington & S. Harris. Rob. Cown. Rich^d Horrel, 8 more were named Assistants In their Regulated Chartar, but Refused to be sworn viz. Greg. Martyn. J. Y[onge]. Rob. Berry, Jn^o Rogers. Nath. Dowrich. Jn^o Wallis. Fr Hill. Jn^o Swm̃ier.

Drake was made Recorder under William's charter, by which this "Regulation" was effected.

The last entries in the book are a copy of the settlement by which the Hospital of the Poor's Portion was established, and a list of the first Court of Guardians appointed under the Act of Anne, 1707. It is noticeable that instead of the Council representatives being chosen by the whole body, six were chosen by the aldermen, and six by the assistants; and that the Court consisted of the leading inhabitants of the town, Hook, the Lieut.-Governor, and Canon Gilbert being two of those chosen by St. Andrew's parish, and Sir John Rogers being at the head of the list for Charles.

AHRENS ON THE HISTORY OF THE DEVELOPEMENT OF THE IDEA OF LAW.

ABSTRACT OF MR. W. ADAMS'S PAPER.

(Read December 16th, 1875.)

HEINRICH AHRENS was born in 1808, near Salzgitter, in Hanover, and educated at the gymnasium of Wolfenbüttel and university of Göttingen. He occupied the chair of philosophy at the university of Brussels from 1834 to 1848, when he was sent as a deputy to the constituent parliament at Frankfort. After the defeat of the movement for union, he became professor at Gratz, whence in 1859 he was called to Leipzig. He died in August, 1874.

His principal work, entitled *Naturrecht oder Philosophie des Rechts und des Staates*, was first published in French. There had been six German and six French editions, and translations into Spanish, Italian, Portuguese, Hungarian, and Polish, but none into English, which was the reason of the delivery of the lecture intended to convey an outline of Ahrens' history of the development of the idea of law.

Law and the State as actually established, as well as the ideas of law and of the State in philosophical knowledge, had been developed under the influences of the general progress of civilization. Four views of law have been displayed by the principal civilized nations: as a bond in the East; as a harmonizing principle of order with the Greeks; as a principle of power and rule with the Romans; and lastly, with the German races, as a rule for the protection of all circles of life. In all four conceptions, to which could be added a Slavonic one, with a certain predominance of the principle of community over that of the individual and of personality, an essential side of the principle of law had been brought into operation, and they must also in a higher stage of civilized life be united.

The history of the development of the idea of law since the recommencement of free philosophical enquiry after the close of

the middle ages, might be divided into three periods; 1st, from Grotius to Thomasius; 2nd, until Kant; 3rd, from Kant to the present time.

1. Grotius (1583–1645) deduced law from the rational nature of man showing itself in the disinterested desire for society, and prompting to a dissatisfaction with the natural condition of mankind and the formation of a legal order of society by contract and stated law to be that which is recognized by the reason as in harmony with the social nature of man.

Hobbes (1588–1679) considered man as a purely sensual material being, prompted by selfishness to abandon the natural condition of war and insecurity, and create a State-power superior to all, and absolute, and looked upon power as the source of law.

Spinoza (1632–1677) by Pantheistic doctrine attained similar results.

Pufendorf (1632–1694) considered man as rendered social by egotism, and deduced law from the duties of this interested sociableness.

Selden, the two Cocceji, Alberti, Seekendorf, and others, opposed the entire naturalistic tendency, and wished to make law dependent in stricter or more moderate manner on religion.

2. Thomasius (1655–1728) distinguished law and morality through the right of enforcing the so-called perfect legal duties, and the want of such right in the case of the so-called imperfect moral duties; and pursued with this distinction chiefly the object of making the province of morals and religion independent of the State-power.

Leibnitz (1646–1716) referred law, like the true and good, to the eternal moral order established by God, and pointed out as its aim the rendering perfect human society.

Wolf (1679–1754) applied the principle of perfection in a more worldly fashion.

In opposition to Montesquieu (1689–1755), who pointed out the relativeness of legal relations, and their dependence on the course of historical development, Rousseau (1712–1778) set up, in the place of the princely absolutism of Hobbes, the absolutism of the democracy created by social contract, governed by delegates whose votes show the common will (*volonté générale*) to be distinguished from the will of all (*volonté de tous*), and which is uncontrolled, and can do no wrong.

3. Kant (1724–1804), though he gave a positive position to morality, defined law negatively as the conception of the limits to the freedom of individuals necessary with a view to the co-existence of the freedom of all.

Fichte (1762–1814) at first separated law again from morality, but afterwards viewed society as a divine order of life, to be realized according to the laws of the reason ruling in all minds.

The historical school—Burke (1730–1797), Hugo (1768–1844), Savigny (1779–1861)—considered law as formed by a rational instinct in nations, and displayed in the course of history.

The theological school referred law in a Romanist direction—De Maistre (1764–1821), De Bonald, A. Müller, and others—or in a Protestant (J. Stahl), to positive religion.

Schelling (1775–1854) censured the formalism of the Kantian jurists, and pointed out, though indefinitely, the need of an organic conception of law.

Hegel (1770–1830) defined law to be the realization of liberty.

Krause (1781–1832) accepted the progress, and included the fundamental ideas of the previous systems in a higher ethical organic conception adopted by Ahrens.

N.B. The lecturer desires to say that the abstract of his paper on Economic Value, found at p. 170 of the last volume of the *Transactions*, is incorrect.

ALFRED ROOKER.

By the death of Mr. Alfred Rooker, from Syrian fever, at Beyrout, on the 27th of May, 1875, the Institution has lost one of its most distinguished members, and Plymouth one of its leading citizens. Mr. Rooker was a man who, possessing great natural abilities, cultivated them wisely and used them well, and whose fame and usefulness were not confined by any merely local limits. He was not a young man, having entered his sixty-second year; but his vigorous activity, and the buoyancy of his spirits, when in 1874 he left Plymouth with his wife and daughters to fulfil a long-cherished desire of visiting the Holy Land, promised many more years of activity in the public service. But it was not to be. He was stricken down while on his homeward journey; and instead of welcoming his return, his many friends had the mournful duty of following his remains to their last resting-place in the Plymouth Cemetery.

“His life,” as the leading organ of the Congregational denomination, of which he was a distinguished ornament, said, “was the practical expression of the ideal life of a Christian layman. The son of an Independent minister at Tavistock, and the lineal descendant of one of the ejected ministers of 1662, religion and Nonconformity were with him traditional inheritances. But in that quiet country town, surrounded by the solemn grandeur of Dartmoor, he caught something more than a tradition of religious life. Nature endowed him richly with the instinct of veneration, and we can well understand how the peacefulness of the minister’s home, and the awe-inspiring solitudes of those silent hills and far-reaching moors, trained and strengthened this faculty.”

Mr. Rooker’s family was of Dutch origin, and the immediate ancestor one of the followers of William of Orange, who landed with him in Torbay in 1688, and settled in England. The name was formerly spelt Rucker. Mr. Rooker himself, though in the truest sense of the word a self-educated man, had the advantage in his early years not only of the training of his father, but of the

teaching of the Rev. W. Evans, then minister of the Abbey Chapel, Tavistock, a scholar of no mean repute, and one of the foremost of the literary and scientific men of that town.

Mr. Rooker became a solicitor, and settled in Plymouth, and at once took a leading position in the public affairs of the town of his adoption, whether municipal, political, religious, or philanthropic. He was made a member of the Corporation without passing through the ordeal of popular election, being chosen an alderman without previously being elected for any ward, and continuing an alderman until his death. He filled the civic chair more than once; and it was his distinguished privilege as chief magistrate to receive the Prince of Wales on the occasion of the opening of the New Guildhall, discharging the onerous duties which then fell upon him with honour to himself and with credit to the town of which he was the representative. But indeed he was ever equal to the position in which he was placed. So high was the esteem in which he was held by the political party to which he was so ardently attached, that he was selected to contest the representation of the borough on the vacation of the seat previously held by Sir R. P. Collier. He was unsuccessful; but want of success did not disturb his equanimity.

Mr. Rooker became a member of the Plymouth Institution in July, 1837, and rarely failed from that time until his death to deliver one or two lectures a session. In 1852 he was elected president of the society, having ten years previously been vice-president; and at the time of his death he was one of the trustees. His first lecture at the Athenæum was delivered in December, 1837, on "International Law;" and the subjects of his subsequent lectures, which indicate a wide range of sound reading, and much original thought, are—1839, "International Law," second; 1840, "Ancient Forensic Oratory," two; 1842, "The Prose Writings of Milton," "Judicial Proceedings among the Anglo-Saxons;" 1843, "Milton's Minor Poetry," "The British Association at Cork;" 1844, "Lunacy: its Legal Incidents," two; 1845, "Rise of the Italian Republics;" 1846, "The Decline of European Literature, and its Revival in the Middle Ages;" 1847, "On the Philosophical Fictions of Sir Thomas More, Bacon, and Swift;" 1848, "Civilisation in the Reign of Elizabeth;" 1849, "Alfred and the Anglo-Saxons;" 1851, "The Koran and its Sequences;" 1852, "The Poetry of the Old Testament Scriptures;" 1854, "Magna Charta

and its Results," "Landmarks of the Constitution;" 1855, "English Liberties: their Founders;" 1856, "Introductory Address," "Thos. Fuller;" 1857, "India;" 1859, "English Parliaments, their Origin and History;" 1861, "Enigmas of History," "Rise of the Italian Republics;" 1862, "Lord Macaulay's Speeches;" 1863, "Slavery in the United States"—a history;" 1865, "Federal Governments;" 1866, "Ancient Books;" 1867, "Andrew Marvell;" 1868, "The Pyrenees;" 1869, "Bases of History;" 1870, "The Canadian Year-book;" 1871, "Literature from the Eighth to the Twelfth Centuries;" and 1873, "Sanitary Legislation." His last lecture at the Athenæum was on the local histories. Local history was a subject to which he had paid considerable attention, and he had on various occasions examined the local records on behalf of Mr. Hepworth Dixon and other well known writers on historical subjects. Mr. Rooker wrote several articles in magazines, &c.; but we are not aware that he published anything separately, except "The Literature and Literary Men of Plymouth," 1845; "Does it Answer? Slavery in America;" and "MDCLXII.," a lecture.

Mr. Rooker's fame as a speaker extended throughout and far beyond the West of England. His speeches were remarkable not merely for their solid basis, their richly ornate and picturesque style, with its fecundity of illustration and felicity of epithet, but for their flowing force, and the grace with which they were delivered. Fulness of thought made the construction occasionally involved; but the silvery tones and perfect intonation of the speaker rendered them to the hearer always clear. Mr. Rooker was a born orator, and had the skill to use his natural gifts to the best advantage.

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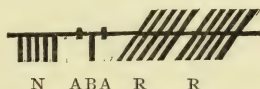
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tive of *B* is so ascertained without resorting to any external proof.

“External corroboration is however found abundantly in the substantial agreements of the results with those derived from the Irish lapidary Ogham texts, many of which ‘echo’ formulæ found in Latin inscriptions, and in one Ogham legend in South Britain. The manuscript keys to the Ogham alphabet preserved in the Irish books differ in one material respect from the South British, and from the generality of Irish lapidary texts, but agree with the Scottish examples; and the South British texts being older than the manuscripts, an inference arises that the Scottish Oghams are more recent than the others.”

The following represents the Oghamic inscription on the stone :



The stone is irregularly square, and probably represents some old boundary mark.

There are three names in three lines, and the inscription may be read as being in memory of Dobunnius Faber, the son of Ennabarrus; or, according to Mr. Bray, of Dobunnius the smith, the son of Ennabarrus; or of Faber, the son of Ennabarrus, one of the Dobuni.

Faber in later ages was no uncommon name, and meant a skilful workman in any art (more particularly in metal; for Faber has more especial reference to a smith or worker of iron). It would be of paramount importance in barbarous ages, that a man's trade or occupation would naturally become, not only an addition, but in itself a proper name; and probably it is so in this case, just as that of Smith in our own. It is also probable, Mr. Bray thought, that the first name in the inscription may have been that of his people.

According to Henry (p. 32), a part of the Dobuni submitted to the Romans. These were probably the subjects of Cogidunus, who became a great favourite of Claudius and succeeding emperors for his early submission and steady adherence to their interests.

Camden says that the Cassii had conquered the Dobuni before the arrival of Cæsar, who made the prince of this country commander-in-chief of the forces of the whole island.

This tribe inhabited Gloucestershire and Oxfordshire. They are supposed to have derived their name *Duffen*, a British word signi-

lying deep or low, because they inhabited for the most part a plain encompassed by hills.

Whether the name on the stone be that of an individual or of a nation, it certainly is, says Mr. Bray, of British origin.

"The inscription," Dr. Ferguson says, "is remarkable as being all in Roman capitals—a criterion thought to bespeak a higher antiquity than where capitals and minuscules are intermingled, as is the case in most of the 'bi-literals' of South Wales." (Pres. Royal Irish Academy, Nov. 29th, 1873.)

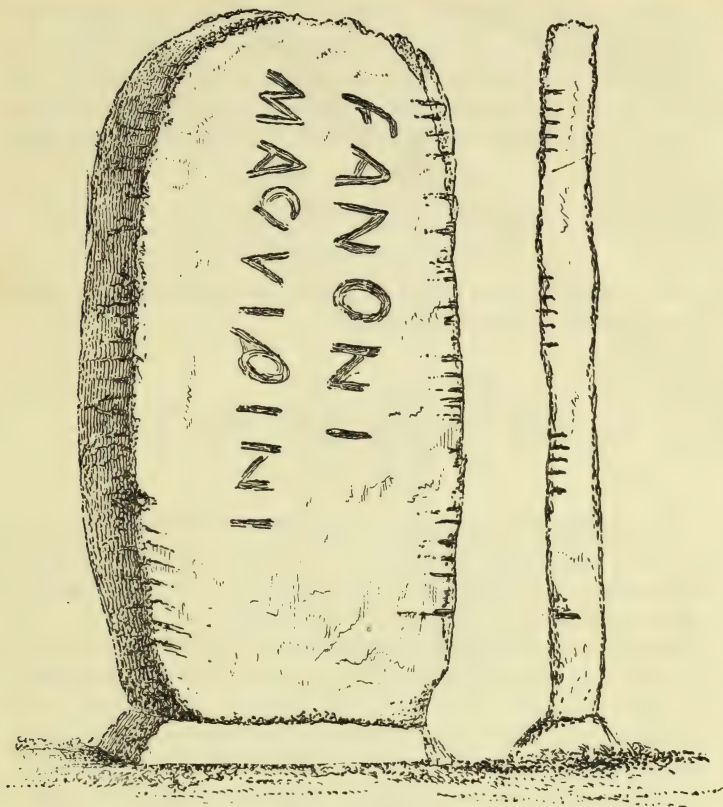
Hübner has given only the Roman inscription in page 10 of his recently published work, *Inscriptiones Britanniae Christianae*, 1876, and appears not to have been able to obtain a drawing of the Ogham inscription upon the same stone, of which he knows neither the form nor dimensions, remarks, "In angulo litteræ Celticæ scriptæ sunt, quarum imaginem nancisci non potui. Formam lapidis depictam non habui mensuramque eius ignoro. S. Ferguson, *Archæol. Camb. sec. iv.* 5, 1874, p. 92 et I. Rhys, *ibid.* p. 173, cf. p. 334 adn. Is mihi ectypum misit litterarum, quod hic repetendum curavi. Litterarum Celticarum has tantum

... NABARR ...

Rhys legit, *diverse a reliquis; ut mihi significavit per litteras. Idem lapide denuo inspecto filli potius quam fili legendum putat.*"

On the reverse side are the letters G. C., which Mr. Bray presumes may stand for Galba Cæsare. But I can see little to induce us to follow Mr. Bray in this, except in his quoting from Shakespeare the following lines:

"Figures pedantical, these summer flies
Have blown me full of maggot ostentation:
I do forswear them."



FARDEL STONE.

The next stone to which I shall draw attention is that which was found some few years since lying over a little brook close to Fardel farm-house, once the mansion and inheritance of the family of the celebrated Raleigh. We are indebted for the preservation of this interesting stone to the care of the late Sir Edward Smirke, who gave a description of it in the *Transactions of the Royal Institution of Cornwall* for 1861. It is to this article I am indebted for most of the information respecting it. The stone has been removed through his instrumentality from the yard at Fardel to the British Museum, where it is now preserved. It is six feet three inches long, two feet ten inches broad, and seven inches thick.

This was the first stone found in England with an Ogham inscription. A few have been noticed in Scotland, and also in Wales, where the inscription of the stone at St. Dogmaels assimilates to this. It also shows an interesting interchange of the Roman *Filius* with the Irish *Mac*, for while the Roman inscription on the face reads

“Sangranus filius Cunotami,”

the Ogham writing on the margin of the stone is

“Sangramnus maqi Cunotami.”

On the Fardel stone before us, the Maq is introduced both in the Roman and the Ogham inscriptions.



On one side of the stone is engraven the word “Sangranui,” and on the other “Fanoni Maqviriini;” but it has been read somewhat differently in the Ogham inscription, where the fifth letter appears to be equivalent to “q” and the seventh to “c.” The “u” is moreover omitted, as it does not necessarily follow the letter “q,” as is the case in the Roman language. Thus instead of Maqviriini, we have Maqiqici; or, as Mr. Brash thinks it not impossible that portions of the fifth symbol may have been destroyed, and consequently it might have corresponded with the letter in the Roman inscription, it would read Maqirici. Thus we have a record to the memory of Fanonus, the son of Virinus, in the Roman inscription, and of Fanon, the son of Iricus, in the other.

The interest which these stones have exists in the fact that the symbol of another language—the Gadelic, or ancient Erse, or Irish language—once existed here.

Hübner in his *Inscriptiones Britannicæ Christianæ* (p. 9) has given the legend as slightly different, and writes, “*Fanoni* reliqui et imago mea eos secuta; sed quod I. Rhys me monuit, scilicet *Fanoni* clare legit, confirmaverunt a me rogati amici musei Britannici.”—A. W. Franks et A. S. Munay.

“*Literas Celticas Rhys nunc et ita legit; Svaqquei maqi Qici* putatque nomen *Svaqquei* componendun esse cum *chwap*, quick hodierno.”



SABINE STONE.

Another of the stones, now standing in the rectory garden at Tavistock, was brought from the parish of Buckland Monachorum, where it did duty in supporting the roof of a blacksmith's shop.

This monument is in tolerable preservation. A hole about six inches long by two wide and four deep is cut in the centre, and interferes with the inscription. And Mr. Bray argues, that as the terminal letters are made smaller than the others, in consequence of the excavation occupying a part of the position required by larger letters, it is quite evident that the hole must have been made in the stone anterior to the cutting of the inscription, consequently the stone must have been in use for some other purpose before it was made available for a rude stone monument.

The inscription is, SABINI FILI MACCODECHETI (in memory of Sabinus the son of Odecheti, or Maccodocheti).

The stone is about six feet eight inches above the ground, and one foot six inches wide.

The inscription appears to have been recently touched for the purpose of making the letters more distinct.

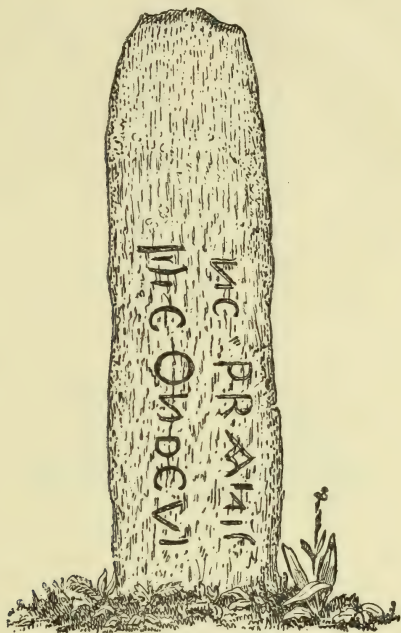
The Mac is present in this inscription as well as the Roman filius, a circumstance which exhibits evidence that the monument was erected when the prefix Mac was losing its distinguished feature, and was becoming incorporated as part of the name.

There is still in Cornwall the name of Odogherty. It would be curious if this should be the modern representative of the Odecheti of this ancient rude monument, the Mac being only a prefix signifying the "son of."

Dr. Ferguson remarks (Royal Irish Academy, November 29th and December 8th, 1873), that "the value of this inscription, although unaccompanied by any Ogham as corroborative of the proofs already adduced, consists in this, that the name or designation which it presents is 'echoed,' so to speak, in several instances by Irish Ogham texts read by the same key. The first of these, which for many years has been in the Academy's lapidary museum, comes from Corkaquinny in Kerry. It bears the legend *Maqqi Decedda* on one side, and *Maqqi Catufi[r]* on the other. The second lies in that rich repository of Ogham inscriptions, the disused burying-ground of Ballintagart, near Dingle, also in Kerry. Its legend reads on one side, *Maqi Deccod[a]*; and on the other, *Caqosi Ceccudo[ros]*. The third is at Killen-Cormac in Kildare, noticed by Mr. Shearman in our proceedings, *loc. cit.* (vol. ix. p. 253), and there are others elsewhere which I have not myself seen. This argument has lately been pressed on the attention of the Welsh Archæologists by Mr. Brash, who has compared the Irish examples with the legend, *ie jacet Maccudecetti*, at Penros Llygwy in Anglesea. But it has been assumed that the Penros monument commemorates a known personage, Machutus son of Eccwyd. Such an explanation seems difficult of application to the very Irish sounding *Sarin*, as I would read it of the Maccodecheti monument at Tavistock. What may be the meaning of the name or designation I do not pretend to explain.

If it were confined to Ireland, one might suppose it to designate a person of a particular family, as in the case, for example, of *Duftac Maculugar*, the contemporary of St. Patrick; but it is hard to conceive how the family of the clan *Degaid* could have spread into Anglesea and Devon, unless indeed it should appear that they were a family in religion, and that the formula indicated an order."

Hübner gives the legend as *Sarini fili macco decheti*, and writes, "De nomine, cf. S. Ferguson, *Archeol. Cambr.* sec. iv. 5, 1874, p. 92, *Sarin* legibatur, potest autem etiam *Sabin* esse non *Sagin*, ut recte observavit Rhys."



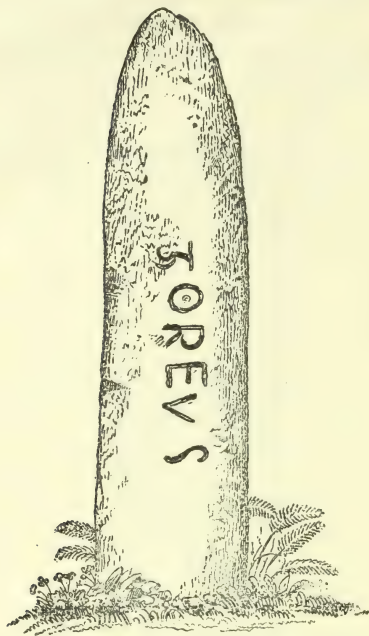
NEPRANUS STONE.

The third stone preserved in the rectory garden was rescued by the late Rev. E. A. Bray from the perilous position of a clam or bridge over a river. Fortunately the inscription was turned face downwards, so that it was preserved from destruction.

The inscription appears to be—NEPRANI FILI CONBEVI (in memory of Nepranus, the son of Conbevus).

The stone is five feet eight inches above the ground, and one foot eight inches wide.

It is figured as *Conbevi* in Hübner's *Inscriptiones Britanniae Christianae* (p. 10), where the author says, "*Condevi* reliqui, *Conbevi* Rhys, qui putat nomen idem esse atque *Cynfyw* recentius."



YEALMPTON STONE.

In the churchyard at Yealmpton is an inscribed stone, for a sketch of which I am indebted to Mr. C. W. Dymond, C.E. He says that the stone is of granite, and that in the back are sunk three rectangular holes a few inches apart in a line, and each about $4'' \times 3''$. They are evidently modern, and have no doubt been made to fix fencing in. I have understood that this stone, like many others of the kind, was prostrate for a long time, and was only re-erected within recent times, hence probably the legibility of the inscription. The drawing has been made from careful measurements, and is, I believe, an accurate representation of the object.



The height is six feet four inches from the surface of the ground, and its breadth at the base is one foot eight inches. The top of the stone is rounded to an obtuse point, and the inscription engraved in Saxon letters is the word *Toreus*. About one mile distant is a village called Torr.

I am also indebted to Mr. Worth, the historian of Plymouth,

for another sketch and measurement. He states that the stone, "as far back as its history can be traced, seems to have lain for centuries in the churchyard of Yealmpton village," and that the inscription is "evidently the name of some Roman or Romanised Britain whose sepulture is commemorated. There has been," he continues, "a suggestion that there was some connection between the bearer of this name and the Torey Brook at Plympton."

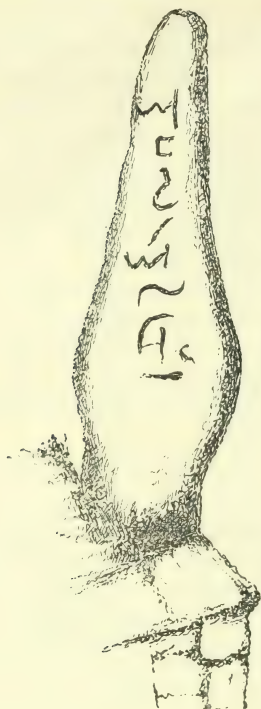
The stone is of granite, and the inscribed face has been more carefully hewn than the other sides.

The Rev. W. Iago, who has given some attention to the inscribed stones in Cornwall, says that this Yealmpton stone has been figured in the *Gentleman's Magazine*. He moreover thinks that the first

letter is the Saxon G , not T , and that the name is "Goreus," and not "Toreus."

Sir Edward Smirke (*Trans. Royal Inst. of Cornwall*, 1861, p. 21) says that "it has been read differently by Polwhele and Mr. Westwood" in vol. viii. of the *Archæological Journal*.

Hübner, in his *Inscriptiones Britannicæ Christianæ* (p. 9), has given a figure of this stone, and interprets the legend as Goreus, but says, "Lectio non usquequaque certa," and represents a figure of a St. Andrew's cross on that portion of the stone which is beneath the ground, adding, "Crucis iacentis signum infra additum fortasse recentius est," giving as his authority the *Archæological Journal*, 1851, p. 424.

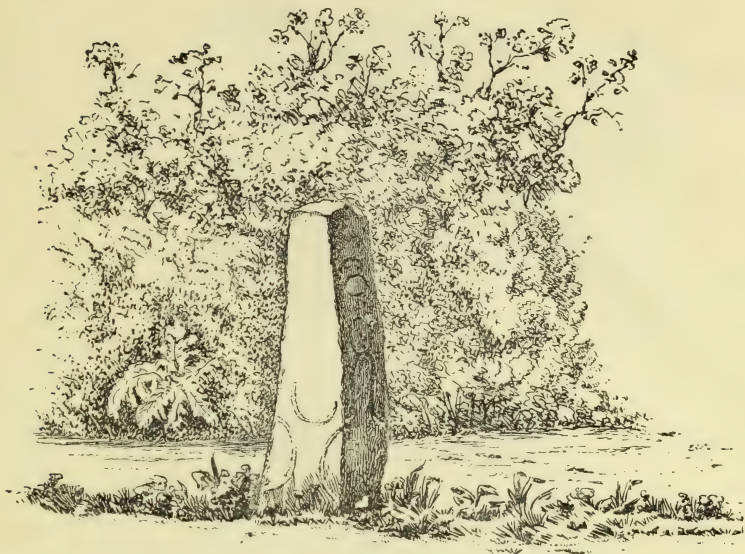


STOWFORD STONE.

This stone stands close on the wall as one enters the gate of the churchyard at Stowford. It is boat-shaped, if we may assume the portion beneath the surface of the ground to resemble that above it. The surface on which the inscription is cut is flat, being widest towards the lower part, and gradually narrowing to the apex. The sides of the stone slope towards each other, so as to approximate the form of a boat's keel. It is five feet four inches above the ground, and one foot two inches in the broadest part.

The inscription consists of eight or nine letters, placed vertically one over the other, while each letter appears to lie horizontally in relation to the others. It was first observed by Polwhele, but has never been satisfactorily determined.

Hübner (*l.c.* p. 11) gives a very poor figure, and writes, "cippus rudis, litteris fugientibus." He gives the legend as *Gurgles* (?). "Tertium vero et ultimum elementum incerta *r* et *s* indicare." But a recent careful inspection induces me to believe it to read *Guniglei*



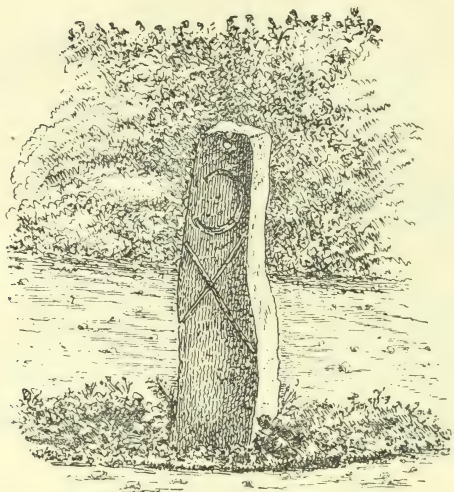
STONE NEAR STICKLEPATH.

(Southern side.)

On the road from Sticklepath to Okehampton, about one mile distant from the former, stands an upright granite post, at a point where another road joins it. The stone is about four feet six inches high, one foot six inches broad at the base of the north and south sides, and eleven inches across the top. The east and west sides are about half the width of the others. Three of the sides are ornamented with figures engraven in the surface; but some of the lines are much weathered.

The southern side appears to have been much injured by this means, so much so that no ornamentation is visible for the first half from the top, which appears to have been fractured off. The lower half is sculptured with three semicircles, which have their convex surfaces approximating to each other, but equidistantly separated: one upon each side, and the third above.

The western face is but seven inches broad, and has no markings: either they are all weathered away, or there were none there. The eastern side has lines that bear a resemblance to an imperfect

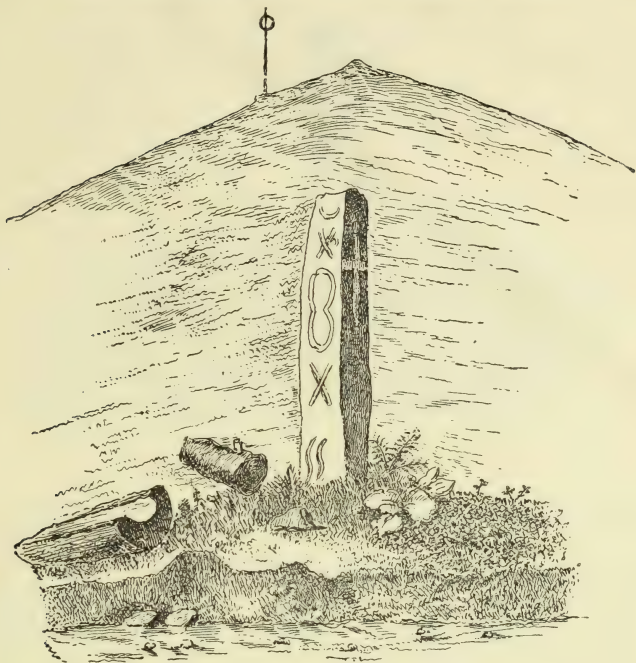


STONE NEAR STICKLEPATH.

(Northern side.)

human figure with a halo round the head. This face is eight inches across. About eleven inches from the top, the segment of a circle, with the convex surface upwards, crosses the stone from margin to margin. A few inches below, is a circle of about five inches in diameter; beneath this is an oval, seven inches long, which has the upper portion obliterated. From the lower margin of the oval two waved lines are produced, each similar in form, but reversed to one another, and terminating at the edge of the stone, about one foot from the ground.

The northern side is more perfect, and is furnished with figures from the bottom to the top; there are two small circles, one above the other, about an inch and a half in diameter, the uppermost being broken through the fractured stone. A few inches further down is a circle of eleven inches in diameter. At the lower part commence, at the edges of the stone, two lines that form a St. Andrew's cross, which reaches nearly to the base of the stone.



LADYWELL CROSS.

Near the village of Sticklepath, not far from an old fountain from which the inhabitants continue to draw water, stands an upright, squarely-hewn stone, known by the name of Ladywell.

On the north face a cross stands in relief, the top of which is surmounted by a round knob, from which, to the arms of the cross, the distance is one foot six inches, while from the lower part of the arms, which are nine inches broad, to the lower extremity of the shaft of the sculptured cross is one foot.

The eastern face is sculptured from the summit to the base of the stone. The uppermost engraving is about half a circle, the upper half being wanting. Below this semicircle is a small St. Andrew's cross, beneath which is a cartouche-like ornament. It is of a long, oval shape, with a contraction of the sides near the middle. Beneath this again is a second St. Andrew's cross, below which are two conformable waved lines like the letter S.

The height of the stone from the ground is five feet four inches.



MAXIMAJOR STONE.

Maximajor is an upright Stone, a rudely-hewn piece of granite, about six feet high and one foot six inches at the base, gradually tapering to a round pointed apex, which is much weathered. It stands near a cross roadway on Marsden Common, about three miles from Moretonhampstead, and a quarter of a mile from the ancient barrow called the Giant's Grave.

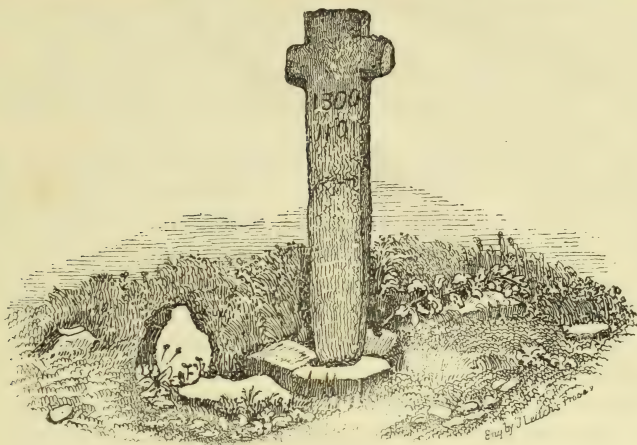
Whether it was ever an inscribed stone or not it is difficult to determine; but the lad who directed me to it said he thought that it was placed there because some one had been murdered, or committed suicide, and was buried there.

The solitary stone pillar, or Maen Hir, appears to have been an object or emblem of worship in many nations, inclusive of the Irish.

The Elgalal, which Heliogabalus adored, was a cone-shaped stone. Eusebius, from the Phœnician annals, relates that *Usous* consecrated two columns—one to fire, the other to air.

The Romans used to swear "*per Jovem lapidum.*" The original Mercury and Bacchus of Greece were unhewn stones, and the Paphian Venus was a pyramidal white-stone. These upright stones were set up for several purposes.

Jacob and other holy men set up pillars of unhewn stone to commemorate especial events. In Ireland the Pillar-stone is called the Dallan: it is sometimes single and sometimes set in groups. It is generally put up for worship, a Phallus; at others, as a monument to commemorate the site of a battle, or the grave of a hero or chief.



NUN'S CROSS.

The Crosses of Devonshire may be divided into Moorland, Roadside, and Church Crosses.

The Moorland are very rudely executed, being roughly hewn out of the native granite. These appear to be the most ancient, and were most probably erected on, or sculptured out of, some older monument of historic interest or religious association.

The roadside crosses are of different character, some being rudely executed, and others more carefully hewn. Most of these have the emblem of the cross engraven on the side towards the road. The more recent have the corners chamfered, after the manner of the sixteenth century crosses. All these fulfilled the double purposes of wayside Calvaries and directing-posts, and were generally placed where two or more roads met.

The churchyard crosses were most probably erected at the spot where the priest officiated previously to the erection of the church. The cross generally stands a little beyond the limits of the churchyard; and in those cases where it is within, has probably been removed at some recent period.

Of all the moorland crosses, the earliest to which we can fix a date is that now known as Nun's Cross. It was one of the boundary-marks of the Perambulation of Dartmoor Forest, made during the reign of Henry III., in the year 1240, and was then known as Siward's Cross.

A curious paragraph is to be found written at the end of one of the documents describing the perambulation, and is as follows: "hit is to be noatid that on the one syde of the crosse abouesaid their is graven in the stone CRUX SIWARDI; and on the oth. side is graven, BOOLANDI."

The remains of these words are still partially visible on the stone as well as a small incised cross in the centre. To all appearance, after several visits and close examinations made both by friends and myself, on one side the word appears to be *Booford*, and on the other we could only decipher the terminal syllable—*ward*.

It is now commonly known as Nun's Cross; but why so named, or why it has lost the name by which it was formerly known, we have no evidence to show.

According to the *Handbook of Devon*, this cross formed one of the boundary marks of Buckland Abbey, and is mentioned as Crux Sywardi in the Charter of Isabella de Fortibus. It marked the "bonde" between the Royal Forest and the Monks' Moor.

It is a rough granite structure, rather larger at the top than the base, where the shaft is inserted in a pedestal level with the ground.

It was, I believe, for some time thrown down; but when the line between the boundary of the forest and the outlying moors was re-defined, the cross was re-erected. It has been broken and repaired by iron clamps. In the map of the first perambulation it is figured as standing upon a pedestal of two steps.

It is probable, as the monument bears two old inscriptions, that the cross was formed out of an old inscribed stone that recorded the burial-place of some prehistoric heroes.

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